TO STUDY THE EFFICACY OF ADD ON DEXMEDETOMIDINE WITH BUPIVACAINE – FENTANYL COMBINATION AS SPINAL ANAESTHETIC AGENTS FOR ENDOSCOPIC UROLOGY SURGERY

A THESIS SUBMITTED TO THE BABA FARID UNIVERSITY OF HEALTH SCIENCES, FARIDKOT (PUNJAB)

FOR THE AWARD OF DEGREE OF

DOCTOR OF MEDICINE

IN

ANAESTHESIOLOGY

BY

DR. SAMRITI

SUPERVISOR

DR. SUNEET KANT KATHURIA

DEPARTMENT OF ANAESTHESIOLOGY
DAYANAND MEDICAL COLLEGE AND HOSPITAL
LUDHIANA
(MAY, 2021)

DECLARATION

I declare that the thesis entitled **"TO STUDY THE EFFICACY OF ADD ON DEXMEDETOMIDINE WITH BUPIVACAINE – FENTANYL COMBINATION AS SPINAL ANAESTHETIC AGENTS FOR ENDOSCOPIC UROLOGY SURGERY"** has been prepared by me under the guidance of **DR. SUNEET KANT KATHURIA**, Professor, Department of Anaesthesiology, Dayanand Medical College and Hospital, Ludhiana. No part of this thesis has formed the basis for the award of any degree previously.

_____

DR. SAMRITI
Department of Anaesthesiology
Dayanand Medical College & Hospital
Tagore Nagar
Ludhiana-141001
Punjab

Date:

CERTIFICATE

I certify that **DR. SAMRITI** has prepared her thesis entitled **"TO STUDY THE EFFICACY OF ADD ON DEXMEDETOMIDINE WITH BUPIVACAINE – FENTANYL COMBINATION AS SPINAL ANAESTHETIC AGENTS FOR ENDOSCOPIC UROLOGY SURGERY"** for the award of degree of M.D. in Anaesthesiology of Baba Farid University of Health Sciences, under my guidance. She has carried out the work at the Department of Anaesthesiology, Dayanand Medical College & Hospital, Ludhiana.

Supervisor

DR. SUNEET KANT KATHURIA
Professor
Deptt. of Anaesthesiology
DMCH, Ludhiana

Co-Supervisor

DR. DINESH SOOD
Professor & Head
Deptt. of Anaesthesiology
DMCH, Ludhiana

Date:

ENDORSEMENT BY THE HEAD OF THE DEPARTMENT AND PRINCIPAL

This is to certify that the thesis entitled **"TO STUDY THE EFFICACY OF ADD ON DEXMEDETOMIDINE WITH BUPIVACAINE – FENTANYL COMBINATION AS SPINAL ANAESTHETIC AGENTS FOR ENDOSCOPIC UROLOGY SURGERY"** is a bonafide research work done by **DR. SAMRITI** under the guidance of **DR. SUNEET KANT KATHURIA,** Associate Professor, Department of Anaesthesiology, Dayanand Medical College & Hospital, Ludhiana.

Head of Department

DR. DINESH SOOD
Professor & Head
Department of Anaesthesiology
DMCH, Ludhiana

Principal

DR. SANDEEP PURI
Principal and Professor
DMCH, Ludhiana

Date:

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Declaration by the Candidate

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DR. SAMRITI
Department of Anaesthesiology
Dayanand Medical College & Hospital
Tagore Nagar
Ludhiana-141001
Punjab

Date:

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Faridkot

Dedicated

to

my family

&

teachers

Acknowledgement

I am grateful to The Almighty who blessed me with the strength and knowledge to complete this venture and helped me strive through the hardships that surfaced during its execution.

I would like to express my sincere thanks and heartfelt gratitude to my supervisor, Dr. Suneet Kant Kathuria, Professor, Department of Anesthesiology, Dayanand Medical College and Hospital, Ludhiana, without whose able guidance and keen interest, the aim of my study could not have been accomplished. His thorough knowledge of the subject and pursuit for perfection helped me successfully finish this project.

It is with great reverence and regards, I want to thank my co supervisor Dr. Dinesh Sood, Professor and Head of Department, whose ever positive attitude and words of encouragement at times of despair were an immense help. I would always be indebted to her for her unflinching support and gratuitous help. It has been a privilege to work under such a knowledgeable person.

With deep regards, I would like to extend my vote of thanks to Dr. Anju Grewal, Professor, Department of Anesthesia for her constant encouragement and support.

I express my gratitude to Dr. Sunil Katyal, Dr. Shikha, Dr. M. Rupinder Singh, Dr. Kamakshi Garg, Dr. Namrata, Dr. Gurpreeti, Dr. Udeyana Singh, Dr. Tanveer Singh, Dr. Richa Jain and Dr. Aneet for their tremendous help, kind support and cooperation.

I would also like to thank my friends, Dr Kanav Sharma, Dr Richa jindal, Dr. Nikhil, Dr. Harsimran Singh, Dr. Nitika, and my seniors Dr. Praduman and Dr. Sumit .Also my extended gratitude to Mr. Ravinder Singh and the whole anesthesia team including staff and technicians. They have been an invaluable support day in, day out for the entire course of work.

Last but definitely not the least, the two pillars of my strength, my parents my mother Kanta Devi and Father Late Dr Harmesh Kumar. Both of you have taught me to live with dignity, to learn from failures and to stay happy because in the end no matter what you are there for me. Thanks is a word not apt enough to show how grateful I am. I would also like to thank my Brother Rahul for boosting my morale at all times and bringing a smile on my face always.

I thank Mrs. Namita Bansal, Mr. Naveen Bhatia, Ms. Sheetal and their whole team in the Department of Research and Development, Dayanand Medical College and Hospital, Ludhiana for the immense help.

Finally, my sincere thanks to all my friends and all the people who have supported me directly or indirectly to accomplish this endeavor by contributing in every possible way.

Samriti

ABBREVIATIONS

%	:	Percent
µg	:	Micrograms
µg/Kg	:	Micrograms/kilograms
ASA	:	American Society of Anaesthesiologists
BMI	:	Body Mass Index
CNS	:	Central Nervous System
DBP	:	Diastolic blood pressure
DOMB	:	Duration of motor block
DOS	:	Duration of surgery
DOSAA	:	Duration of spinal anaesthesia
DOSB	:	Duration of sensory block
HLSB	:	Highest level of sensory block
HR	:	Heart rate
I/T	:	Intrathecal
MAP	:	Mean arterial pressure
mg	:	Milligrams
mg/kg	:	Milligram/kilograms
min	:	Minute

ml	:	Milliliters
NS	:	Non significant
RR	:	Respiratory rate
SBP	:	Systolic blood pressure
SD	:	Significant
SpO_2	:	Oxygen saturation
T	:	Thoracic dermatone
TOAR	:	Time of analgesia request
TOMB	:	Time of onset motor block
TOSB	:	Time of onset sensory block
VAS	:	Visual analoguse scale
α	:	Alpha
β	:	Beta
δ	:	Delta

ABSTRACT

Introduction: To study the efficacy of add on Dexmedetomidine with Bupivacaine-fentanyl combination as adjuvant to local anaesthetic agent in spinal anaesthesia.

Method: One hundred patients of either sex belonging to ASA Grade 1 or 2 posted for endoscopic urology surgery were enrolled in this study. Patients were divided into two groups of 50 patients each according to randomization list. The study was conducted in randomized double-blind manner after approval from Institutional ethical committee. In Group A, patients were administered spinal anaesthesia using 2ml hyperbaric bupivacaine + 0.5% with fentanyl 25µg (0.5ml) and 0.1ml saline. In Group B, patients were administered 2ml hyperbaric bupivacaine 0.5% + fentanyl 25µg (0.5ml) and dexmedetomidine 10µg (0.1ml). Onset and duration of sensory and motor blockade was observed. Hemodynamic parameters and side effects were also noted.

Results: In group A, onset of sensory block was early in group B as compared to group A. Duration of sensory and motor blockade was significantly prolonged in group B. Postoperative analgesic requirement was less in group B as compared to group A.

In terms of hemodynamic profile patients of group B were more stable hemodynamically. Sedation score was more in group B and VAS score was more in group A. Other side effects like nausea/vomiting and hypotension were not statistically significant between both the groups.

Conclusion: Dexmedetomidine as adjuvant to bupivacaine-fentanyl combination hastens onset time of sensory block and prolongs the duration of sensory and motor blockade, reduces the requirement of post-operative analgesic requirement, provides more hemodynamic stability.

Keywords: Dexmedetomidine, Fentanyl, Bupivacaine,Adjuvant, Spinal anaesthesia.

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INTRODUCTION

Spinal Anaesthesia came in medical practice with introduction of cocaine by Koller in 1884[1]. August Bier introduced spinal anaesthesia for surgical pain relief in 1898[2]. Spinal anaesthesia results in sympathetic block, sensory block and motor blockade depending on nature, volume and concentration of local anaesthetic use[3]. Spinal and epidural anaesthesia is considered superior to general anaesthesia because of less intraoperative blood loss, low incidence of deep venous thrombosis and minimal requirement of postoperative analgesia[4]. Regional anaesthesia is better option for elderly patients due to lower incidence of postoperative delirium and confusion than general anaesthesia[5].

Bupivacaine is routinely used for lower limb and lower abdominal surgeries as a local anaesthetic agent in spinal anaesthesia, Bupivacaine when used alone in low dose for subarachnoid block is associated with shorter duration of action, thus early analgesic interventions are required in postoperative period[6].

Adding adjuvant to local anaesthetic increases the efficacy of neuraxial block, thus various adjuvants have been used intrathecally e.g. opioids like fentanyl, morphine, pethidine, sufentanyl, buprenorphine, hydromorphone and tramadol[7]. Fentanyl is the most common short-acting opioid that is used intrathecally in combination with local anaesthetics. It has synergistic effects with local anaesthetics and improves the status of intraoperative and postoperative analgesia[8].

It has been reported that intrathecal administration of fentanyl can prolong the duration of subarachnoid block and postoperative analgesia. However, side effects like nausea, vomiting, urinary retention, pruritis and respiratory depression are common[9,10].

Other drugs such as magnesium sulphate, alpha 2 adrenergic agonists i.e.clonidine and dexmedetomidine can also be used as adjuvant for intrathecal local anaesthetic for better quality of spinal anaesthesia[11].

Alpha 2 agonists for e.g. Dexmedetomidine, as adjuvant to local anaesthetic have analgesic property, it is highly lipophilic in nature,

rapidly dissolves into cerebrospinal fluid and binds to alpha 2 adrenoreceptor on the spinal cord and potentiates the efficacy of local anaesthetic agent [12,13].

Dexmedetomidine has high affinity for alpha 2 adrenergic receptors than alpha 1 receptor, which is responsible for its analgesic effect[14]. In addition to analgesic effects, dexmedetomidine also has anxiolytic, anti-hypertensive, sedative/hypnotic and sympatholytic effects [15]. Analgesic effects of intrathecal dexmedetomidine are due to inhibition of release of C-fibres transmitters and also due to hyperpolarization of post synaptic dorsal horn neurons [16]. Sedative and antinociceptive effects of dexmedetomidine are due to stimulation of alpha 2 adrenoreceptor in locus ceruleus [17].

There is evidence of synergism between opioids and alpha 2 adrenoreceptors agonists experimentally [18]. But, the clinical application of this combination is not extensive and controversial [19, 20].

In literature many studies have compared the effect of fentanyl and dexmedetomidine as adjuvants to bupivacaine in spinal anaesthesia and found to improve the quality of analgesia, accelerate the onset of action, prolong post-operative analgesia and reduced the dose of local anaesthetic, hence reduces the incidence of side effects caused by high dose of local anaesthetics such as late and severe bradycardia, hypotension, nausea and vomiting [21-23].

Previous studies have also revealed that the combination of fentanyl and clonidine with bupivacaine in spinal anaesthesia improves the quality of intraoperative analgesia and reduces the demand for post-operative analgesia with increase in duration of sensory and motor blockade much beyond that provided by fentanyl or clonidine individually as adjuvants to bupivacaine and reduces the side effects like nausea, vomiting, pruritis and shivering. It has also been reported that intrathecal clonidine is associated with hypotension and bradycardia[24, 25].

Dexmedetomidine and clonidine both are alpha 2 adrenergic agonists but dexmedetomidine is 8-10 times more potent and specific than clonidine with lesser side effects. Limited studies have been reported

on the influence of intrathecal dexmedetomidine as adjuvant to bupivacaine as compared to bupivacaine alone in spinal anaesthesia for urological procedures [26]. So, we plan to evaluate the efficacy of dexmedetomidine as adjuvant to fentanyl- bupivacaine combination in terms of onset, duration of sensory and motor blockade, hemodynamic changes, sedation score and potential side effects in endoscopic urology surgery.

AIMS & OBJECTIVES

The study was conducted to evaluate the efficacy of add on dexmedetomidine with Bupivacaine-fentanyl combination as spinal anaesthetic agents to asses:

1. Onset, maximum level and duration of sensory blockade.
2. Onset, quality and duration of motor block.
3. Intraoperative and post-operative Hemodynamic variations.
4. Post-operative analgesic requirement in 24 hours.
5. Side effects if any.

REVIEW OF LITERATURE

The first planned spinal anaesthesia was administered by August Bier on 16thAugust 1898. He and his assistant August Hildebrandt used Quincke method to enter intrathecal space and gave 5 mg to 15mg of cocaine for spinal anaesthesia in surgical procedures of lower limb in total of six patients[27]. August Bier reported high incidence of side effects like vomiting and headache. To investigate he subjected himself and his assistant to this technique and both of them developed headache which was attributed to large CSF loss [28].

Tuffer and Matas also explain the use of cocaine in spinal anaesthesia for lower abdominal surgeries. Spinal anaesthesia was used initially with cocaine then procaine, dibucaine and tetracaine [28].

Procaine was introduced in 1905 by Einhorn. It was the first synthetic compound to be used as local anaesthetic agent. After prilocaine various compounds of similar chemical structure were introduced like chloroprocaine and tetracaine. The major drawback of these group of drugs was allergic reactions due to its metabolite i.e. para amino benzoic acid [29].

Lignocaine was considered standard local anaesthetic drug because of intense and longer conduction blockade with lesser side effects. It has short duration of action (45min-1hour) so it is preferred in spinal anaesthesia for ambulatory setting and short duration surgeries.Dose is 3mg/kg without adrenaline and 7mg/kg with adrenaline. In 1993 Schneider M et.al found four cases of transient neurological symptoms which manifested as moderate to severe pain in lower back, buttocks and posterior aspect of thighs that was appeared 6 to 36 hours after single shot subarachnoid block with hyperbaric lignocaine 5% [30]. It was observed that the neurotoxicity was concentration dependent, then Hampi et .al also observed similar incidence with 5% lignocaine in 7.5% glucose in spinal anaesthesia [31].

Ekbolm and Widman used bupivacaine as local anaesthetic for intradural block [32]. The major benefit of bupivacaine appeared in Obstetric for labour analgesia with adequate motor blockade after

extradural administration [33]. It also has some adverse effects like CNS toxicity which includes dizziness, vertigo, difficulty in focusing, tinnitus, drowsiness, coma, respiratory distress, slurring of speech, convulsion and respiratory arrest.

CNS Toxicity is due to suppression of Inhibitory cortical neurons leading to unopposed excitatory pathways [34].

Adjuvants to Local Anaesthesia

In order to preserve advantage of Local anaesthetic agent and to decrease the side effects, research was done to add various adjuvants to local anaesthetic agents.

Vasoconstrictors like epinephrine have been used as an adjuvant to local anaesthetic agents and found to prolong the duration of spinal anaesthesia. Epinephrine was found to prolong the duration of lignocaine when used in dose of 0.2 mg in spinal anaesthesia[35]. Epinephrine was believed to prolong spinal anaesthesia due to vasoconstriction of spinal cord vessels and leads to less uptake of local anaesthetics. This vasoconstriction may hempen the blood supply of spinal cord but no human data is available to support this theory [35].

David Hood administered neostigmine intrathecally and found that it can be used for analgesia but it was associated with increase in nausea and vomiting [36,37].

Some other adjuvants Like Midazolam [38], adenosine [39] and ketamine [40,41] have also been used with variable success with local anaesthetic agents in neuraxial blocks.

Opioids as Adjuvant

Intrathecal Opioids emerged out as good adjuvant, it prolongs the duration of postoperative analgesia, reduces the intraoperative analgesia requirement. Opioids acts on the specific receptor on the dorsal horn of spinal cord and control pain transmission by directly acting on dorsal horn [42-44].

Synergism between local anaesthetic and opioids suggested for reliable spinal anaesthesia with less hypotension using low dose of local anaesthetic [45].

Fentanyl is lipophilic in nature its lipophilic property decreases its rostral migration to respiratory centre, thereby not causing delayed respiratory depression. It provides good intraoperative and post-operative analgesia as adjuvant to bupivacaine in spinal anaesthesia [46].

In one study conducted by Ben David et al. in 20 patients aged 70 years posted for Hip fracture surgery were randomized into 2 groups of 10 patients each. Group I received intrathecal bupivacaine 4 mg + Fentanyl 20 µg and group II received 10 mg bupivacaine alone. They observed that mini dose of 4 mg bupivacaine in combination with 20µg fentanyl provides adequate spinal anaesthesia for surgical repair/Hip fracture in the elderly. The minidose combination caused less hypotension (1 out of 10), than 10 mg bupivacaine (nine out of 10) and almost nil requirement of vasopressor support for blood pressure [47].

Stocks et al. conducted a study to find out median effective dose of bupivacaine with different doses of fentanyl, they concluded that there was reduction in median effective doses for all bupivacaine - fentanyl groups as compared to bupivacaine alone. They found increase in pruritus in fentanyl groups as compared to bupivacaine [48].

Reuben et al stated that 20µg of intrathecal fentanyl required to provide good postoperative analgesia in elderly patients undergoing revascularization surgery [49].

Varassi et al reported early respiratory depression with 50µg intrathecal fentanyl as compare to 25 µg [50].

A meta-analysis by Popping et al. concluded that the adding opioid such as fentanyl intrathecally leads to reduction in the dose of local anaesthetic agent and augments its analgesic potency and decreases its adverse effects [51].

Alonso et al. showed that when intrathecal fentanyl is added to hyperbaric bupivacaine in elderly patients undergoing orthopaedic surgery, it results in greater hemodynamic stability and allows the use of a lower dose of local anaesthetic thereby reducing the need for intravenous ephedrine during surgery [52].

Adverse effects of opioids are nausea, vomiting, urinary retention, pruritis and respiratory depression [53]. Out of all, most dangerous complication is respiratory depression. Incidence is 0.1% to 1% in perioperative period [54].

DEXMEDETOMIDINE

Dexmedetomidine is an alpha2 receptor agonist that has analgesic, sedative, hypnotic, sympatholytic and anxiolytic effects [55-60]. Intrathecal dexmedetomidine prolongs both sensory and motor block and has a nociceptive action for both visceral and somatic pain [61]. Intrathecal dexmedetomidine has been used as an adjuvant to different local anaesthetic agents in humans with various doses ranging from 2 to 15µg [62-65].

Alpha receptors are located in the primary afferents of the dorsal horn of the spinal cord also in descending noradrenergic pathways. Activation of these receptors stops the firing of nociceptive driven cells, decrease the activity of a wide range of neurons and also decrease release of substance P and other neurotransmitters in response to stimuli [66].

Dexmedetomidine causes decrease in the activity of projection of locus ceruleus to the ventrolateral preoptic nucleus. This leads to increase in GABAergic and galanin release in Tuberomammillary nucleus [67].

It induces sedation through receptors, which exert their action via GABA pathway. Alpha 2 agonists inhibit ion conductance via L and P type Calcium channels and conductance through voltage gated calcium activated K+ channels [68]. Dexmedetomidine as adjuvant to bupivacaine for spinal anaesthesia, shown to produce shorter onset of motor blockade, leads to prolongation of motor and sensory blockade with less adverse events and more hemodynamic stability [63].

AL-Mustafa et al. conducted a study and concluded that adding dexmedetomidine to bupivacaine for neuraxial block improves quality of anaesthesia and also decreases the requirement of rescue analgesia [62].

Al-Ghanem S M et al. conducted a double-blind controlled study on 76 patients of ASA status I/II scheduled for vaginal hysterectomy, vaginal

wall repair, and tension free vaginal tape to evaluate the onset and duration of sensory and motor block as well as operative analgesia and adverse effects of dexmedetomidine or fentanyl given intrathecally with isobaric 0.5% bupivacaine for spinal anaesthesia and they concluded that 10mg plain bupivacaine supplemented with 5 µg dexmedetomidine in spinal anaesthesia produces prolonged motor and sensory block with minimal side effects compared with 25 µg Fentanyl [21].

Gupta Ret al. conducted double-blind study on sixty patients of ASA classes I and II scheduled for lower abdominal surgeries to evaluate the onset and duration of sensory and motor block, hemodynamic effects, postoperative analgesia, and adverse effects of dexmedetomidine or fentanyl given intrathecally with hyperbaric 0.5% bupivacaine and found that intrathecal dexmedetomidine is associated with prolonged motor and sensory block, hemodynamic stability, and reduced demand for rescue analgesic in 24 h as compared to fentanyl [22].

Mahendru V et al. conducted a double-blind study on 120 patients to compare the onset, duration of sensory and motor block, hemodynamic effects, postoperative analgesia, and adverse effects of dexmedetomidine, clonidine, and fentanyl used intrathecally with hyperbaric 0.5% bupivacaine for spinal anaesthesia and they concluded that intrathecal dexmedetomidine is associated with prolonged motor and sensory block, hemodynamic stability and reduced demand of rescue analgesic in 1st 24 hours as compared to clonidine, fentanyl or bupivacaine alone [23].

Megalla SA, conducted a study including fifty patients ≥60 years old of either sex, ASA III and IV undergoing elective orthopaedic hip surgery in one lower limb under unilateral spinal anaesthesia. The patients were randomized in two groups to receive; Group F: 12.5mg of 0.5% hyperbaric bupivacaine + 20 µg fentanyl. Group FD: 12.5 mg of 0.5%hyperbaric bupivacaine 20 µg of fentanyl 6 µg dexmedetomidine. Block characteristics, hemodynamic changes, postoperative analgesia and adverse effects were studied. Addition of 6 µg dexmedetomidine to 12.5mg bupivacaine + 20 µg fentanyl intrathecally greatly enhanced

the duration of postoperative analgesia and was not associated with hemodynamic instability or other complications in high risk elderly patients undergoing orthopaedic surgery under unilateral spinal anaesthesia [69].

ShuJun Sun and colleagues conducted a study it is randomized controlled trials comparing the effects of dexmedetomidine and fentanyl as adjuvants to local anaesthetics for intrathecal injection. Compared to fentanyl, Dexmedetomidine as local anaesthetics adjuvant in spinal anaesthesia prolonged the duration of spinal anaesthesia, improved postoperative analgesia, reduced the incidence of pruritus, and did not increase the incidence of hypotension and bradycardia [70].

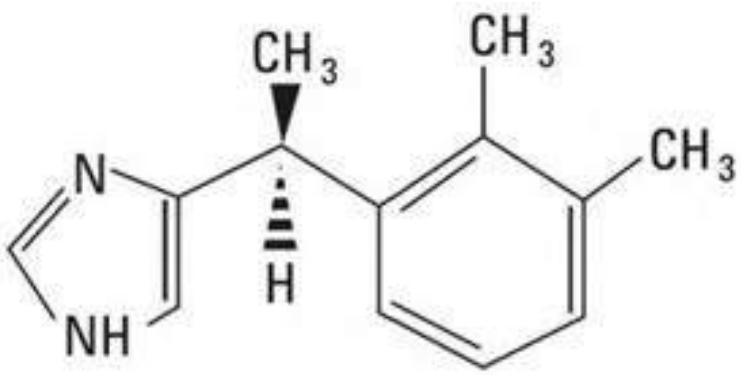
Alaa Mazy et.al conducted randomized double-blinded study which included patients scheduled for orthopaedic procedures expected to extend more than 4 hours. Patients were allocated into two groups. Group D received intrathecal bupivacaine 20 mg 0.5% + dexmedetomidine 10 µg. Group DF received bupivacaine 20 mg 0.5% + dexmedetomidine 10 µg + fentanyl 25 µg. The spinal block characteristics and adverse effects were determined. The addition of fentanyl does not prolong the sensory and motor block characteristics of dexmedetomidine. Dexmedetomidine-fentanyl combination was found to have less hypotension and less sedative requirement [71].

Kim et al. conducted a study and found that Dexmedetomidine - Bupivacaine mixture intrathecally give better quality of spinal anaesthesia, less requirement of post-operative rescue analgesia and it prolongs the sensory and motor blockade [72].

Kanazi et al. confirmed that 3 µg dexmedetomidine intrathecally with bupivacaine prolongs the duration of sensory and motor blockade with more hemodynamic stability and adequate sedation [73].

REVIEW OF DRUG DEXMEDETOMIDINE

Dexmedetomidine is an alpha 2 adrenoreceptor agonist, an active dextroisomer of medetomidine. It is more selective alpha 2 agonist as compared to alpha one receptor in ratio of 1600:1 [74].



Chemical structure of Dexmedetomidine

PHARMACOKINETICS

Dexmedetomidine act on alpha 2 adrenoreceptors which are G protein coupled. Elimination half-life of Dexmedetomidine is 2 to 3 hours, with sensitive half time ranges from 4 to 10minutes. The response to alpha 2 adrenoreceptor agonist is stimulation of alpha 2 adrenoreceptors located in CNS and spinal cord. This leads to sympatholysis, sedation and antinociceptive effects due to alpha 2 adrenoreceptor [75]. Effects of alpha 2 adrenoreceptors reversed by alpha 2 adrenergic antagonist i.e. atipamezole [76].

Route of Administration:

Intravenous, intramuscular, submucousal, intranasal and intrathecal.

ANALGESIA

Analgesic effect is due to stimulation of alpha 2a receptor in the dorsal horn, it suppresses pain transmission by decreasing the release of pronociceptive transmitters, substance P and glutamate. It reduces hyperpolarization of interneurons [66].There is evidence of low opioid requirement in intraoperative and postoperative period with intrathecal use of Dexmedetomidine [77]. Spinal and supraspinal sites modulate the transmission of nociceptive signals in the central nervous system. Peripheral alpha 2 adrenoreceptor also mediate antinociception. Studies in mice have demonstrated that the alpha 2 adrenoreceptor are responsible for sedative and analgesic property of dexmedetomidine [78,79].

Nakagawa et al suggested that α2-adrenergic mechanisms are involved in the modulation of nociception at the level of spinal noradrenergic systems [80].

RESPIRATORY EFFECTS

In a normal spontaneously breathing person, Dexmedetomidine at a concentration which can cause sedation results in reduction in minute ventilation. There is no effect on pH, arterial oxygenation and on CO_2 ventilatory response curve. In a study comparing dexmedetomidine and remifantanil effects on respiratory parameters, study showed that the hypercapnic ventilatory response was not affected even with doses that produced unresponsiveness to vigorous stimulation [81].

SEDATION

Dexmedetomidine leads to decrease in the activity of projections of locus ceruleus to the ventrolateral preoptic nucleus, this leads to increase in the GABAergic and galanin release in the tuberomammillary nucleus, which causes reduction in histamine release in cortical and subcortical regions [67]. Sedative effect is due to endogenous sleep promoting pathways [68].

HEMODYNAMIC EFFECTS

α2-Adrenoceptor agonists blunt hemodynamic variability during surgery and recovery, exert anti-ischemic effects in the perioperative period, and also effective in decreasing high rates of early postoperative ischemic events. The first trial investigating the cardioprotective effects of α2-adrenoceptor agonists was Europe Trial, the Multicenter Study of Perioperative Ischemia (McSPI)[82]. High-risk patients who received dexmedetomidine from 1hour before until 48 hours after vascular surgery experienced significantly fewer ischemic episodes than patients in the placebo group [83,84].

Presynaptic alpha 2 adrenoreceptor activation inhibits release of norepinephrine which causes termination of pain signals. Postsynaptic activation of alpha 2 adrenoreceptor inhibits sympathetic activity in Central nervous system which causes decrease in Blood pressure and Heart rate [85,86].

Dexmedetomidine is useful adjunct to cardiovascular anaesthesia, provides protective pharmacologic profile with only moderate sympathetic depression [87]. The decrease of cardiac output and the increase in systemic vascular resistance seen in response to dexmedetomidine do not seem to be related to a decreased contractility, relaxation, or intracellular calcium-channel block [87]. Instead, the hemodynamic changes can be attributed to the dexmedetomidine-induced bradycardia, α2-adrenergic stimulation, and a decrease in oxygen requirements [88].

Bolus dose of dexmedetomidine 1µg/kg results in increase in blood pressure and reflex reduction in heart rate mostly in younger and heathier patients [89].

The baroceptor reflex is maintained and preserved in patients receiving dexmedetomidine and reflex heart rate response to stimuli is enhanced [90].

Side effects of Dexmedetomidine: Hypotension, nausea, bradycardia, Atrial fibrillation and hypoxia [56, 57].

MATERIAL AND METHODS

This study was conducted in a Randomized controlled, double-blind manner after approval by the institutional Ethical committee in the Department of Anaesthesia, Dayanand Medical College and Hospital, Ludhiana. Written informed consent was taken from all the 100 participants of either sex, belonging to ASA grade I or II, scheduled for endoscopic urology surgery under the subarachnoid block, randomly allocated into either of 2 groups of 50 patients each according to the Randomization list.

Following were exclusion criteria:

1. Patients with any contraindication to regional anaesthesia.
2. Patients with a history of Ischemic heart disease, Renal dysfunction and severe liver disease.
3. Patients with Bodyweight <40kg or >95kg or Height < 150 cm.
4. Patients with Coagulation disorders.
5. Patient with History of Chronic pain.
6. Morbidly obese Patients.
7. Patients with spine deformities like Kyphoscoliosis,Scoliosis, etc.
8. Patients with a history of anaphylaxis to local anaesthetics and allergy to the drugs to be used.
9. Local skin infection or disease.
10. Patient's refusal for Subarachnoid block.

Preanaesthetic Checkup:

A complete Preanesthetic checkup was done one day before surgery. It comprised of detailed history, general physical and systemic examination. Routine investigations like complete hemogram, Urine routine, Renal function test, PTI/INR, random blood sugar, Chest X-ray and ECG were done before surgery.

Premedication

All the patients were kept Nil orally for at least 8 hours prior to surgery. Following premedication were given to all the patients:

1. Tab Pantoprazole 40mg orally at night before surgery and 40mg at 6am on the day of surgery, with water sips.

2. Tab Alprazolam 0.25 mg orally at night before surgery.

ANAESTHESIA TECHNIQUE

After shifting the patient to the operation theatre, baseline parameters like Heart rate (HR), Systolic Blood Pressure (SBP), Diastolic Blood pressure (DBP). Respiratory Rate (RR), Electrocardiogram (ECG), Oxygen saturation via pulse oximeter (Spo2) were recorded by the candidate who did not know the adjuvant drug to be used.

The drug code to be given was sealed in envelopes numbered 1-100, which was opened by the designated consultant of the work area just before administering anaesthesia and prepared in 3 ml syringe. The treatment group was as under:

Group A: Intrathecal Hyperbaric bupivacaine 0.5% (2ml) +Fentanyl 25mcg (0.5ml) + Normal saline (0.1ml)

Group B: Intrathecal Hyperbaric bupivacaine 0.5% (2ml) + Fentanyl 25mcg (0.5ml) + Dexmedetomidine 10mcg (0.1ml)

These solutions were prepared in a 3ml syringe by an anaesthesiologist who then handed them over to the attending anaesthesiologist in a coded form which was blind to the nature of the drug given to him/her. After inserting a large bore cannula, preloading with 500ml ringer lactate was done. Subarachnoid block was administered under all aseptic precautions in the sitting position. 26-gauge Quincke spinal needle was introduced into subarachnoid space at L2-L3 or L3-L4 vertebral level after infiltration of 2ml of 0.5% lignocaine. After confirmation of the free flow of CSF, the drug solution was administered through the spinal needle. After withdrawing the needle, the patient was repositioned supine.

OBSERVATIONS:

Onset and duration of sensory block, the highest level of sensory blockade, onset of motor block, time for complete motor recovery and the total duration of spinal anaesthesia were recorded. The onset of sensory blockade was defined as the time taken from intrathecal injection till the patient does not feel touch by cotton swab at T10 level. The duration of sensory blockade is defined as the time taken till the patient feels the sensation at S1. Motor block onset was assessed by

the Modified Bromage score. Time for motor block onset was defined as when the Modified Bromage score becomes one. Complete Motor block recovery was defined as when the Modified Bromage score becomes zero. The total duration of spinal anaesthesia was defined as the period from spinal injection till the time patient complains of pain in the post-operative period.

INTRA-OPERATIVE ASSESSMENT

Sensory block levels was recorded every 5 mins for the first half an hour, then every 15mins, the Maximum level of sensory blockade attained and the time is taken for the same was noted. Motor blockade was assessed using the Modified Bromage score. HR, SBP, DBP, RR, Mean arterial pressure (MAP) and SpO_2 were recorded before intrathecal injection (Baseline value) and then every 5 mins for the first half an hour then every 10 minutes throughout the procedure.

Intravenous fluids were given to maintain blood pressure. If HR was below 50bpm, 0.6mg atropine sulphate was given intravenously. The incidence of hypotension (mean arterial pressure <20% of baseline), bradycardia (HR<50bpm), hypoxemia and excessive sedation, nausea, vomiting, pruritis were recorded. Injection ondansetron hydrochloride 4mg intravenous was given when nausea vomiting was observed.

After completion of surgery HR, SBP, DBP, MAP, RR and SpO_2, sensory and motor block and VAS score were recorded and then the patient was shifted to the recovery room.

POST OPERATIVE ASSESSMENT

After shifting the patient to the recovery room HR, SBP, DBP, MAP, RR and Spo2 were recorded every 15 minutes for the first half an hour, then every half-hourly till 4 hours and then every 4 hours till 24hours. Motor block recovery (Modified Bromage Score) and sensory block regression were assessed every 15 mins till complete recovery from sensory and motor blockade. All observations were recorded by an anaesthesiologist who was blinded to the group allocation of the patient.

Quality of post operative analgesia was assessed using:

1. VISUAL ANALOGUE SCALE

A 10cm line having verbal anchors at both ends was used to assess post-operative pain evaluated by VAS i.e. Visual Analogue Scale.Scoring was done by asking the patient to mark the line and measuring the line and measuring the length of the line in cms. Mark 0 corresponds to 'no pain' and mark 10 corresponds to the 'worst imaginable pain'. Reading was taken at 0, 1, 2, 3, 4, 8, 12, 18 and 24 hours postoperatively.

2. POST OPERATIVE ANALGESIC REQUIREMENT

Patients were informed that they could request an analgesic when they feel pain in the recovery room in post operative period. Patients showing VAS more than or equal to 4 were administered a supplement dose of an analgesic with Tramadol 50mg intravenously. The patient was again observed for pain after one hour of giving tramadol and if VAS was still found to be more than or equal to four, 50mg tramadol injection was repeated again upto a maximum of 100mg in 4 and 400mg in 24 hours. If the patient is still feeling pain after giving a maximum dose of tramadol, Inj Diclofenac 75mg given slowly intravenously over 20mins upto maximum 3 doses in 24 hours.The total analgesic required by the patient in the next 24 hours was quantified and documented in both groups.

Patients were discharged from the recovery room when the motor block was completely resolved i.e., Modified Bromage score zero and when other criteria like stable vitals,no nausea/vomiting and no severe pain criteria were met. Patients were also be assessed for the complication on the day after surgery by the observer.

STATISTICAL ANALYSIS

After the study was complete, observations were tabulated and analyzed using statistical methods.

Data was described in terms of range; mean ±standard deviation (± SD), median, frequencies (number of cases) and relative frequencies (percentages) as appropriate. Comparison of quantitative variables between the study groups was done using Student t-test and Mann

Whitney *U* test for independent samples for parametric and non-parametric data, respectively. For comparing categorical data, Chi-square ($\chi 2$) test was performed and the exact test was used when the expected frequency is less than 5. Sensitivity, specificity, positive and negative predictive values and accuracy of the method and its confidence interval (*95*% CI) will also be calculated. A probability value (*p*-value) less than 0.05 was considered statistically significant. All statistical calculations were done using SPSS (Statistical Package for the Social Science) SPSS.

OBSERVATIONS AND RESULTS

The present study was conducted on 100 patients of either sex in a randomized, double-blind manner who were undergoing endoscopic urology surgery at Dayanand Medical and College and hospital, Ludhiana. Patients were divided into two groups:

GROUP A

Intrathecal Bupivacaine 10mg (2ml) + Fentanyl 25mcg (0.5ml) +Normal saline (0.1ml)

GROUP B

Intrathecal Bupivacaine 10mg (2ml) + Dexmedetomidine 10mcg (0.1ml) Fentanyl 25mcg (0.5ml)

Table 1-a

Distribution of the patients according to age

	Group A		Group B		t	p- value
	(Fentanyl) (n-50)		(Dexmed+fentanyl) (n-50)			
	Mean	SD	Mean	SD		
Age	56.42	14.72	54.6	18.34	0.547	0.585
Range	23-80		17-81			

This table depicts the mean age in Group A and B was 56.42±14.72 and 56.60±18.34. Both groups were comparable as the difference was not statistically significant between both groups in terms of mean age (p-value >0.05).

Table 1-b

Distribution of Age according to subgroups

Age (Years)	N	Group A (Fentanyl) (n-50)		Group B (Dexmed+Fentanyl) (n-50)		χ^2	df	p-value
		F	**%**	**F**	**%**			
<=25	8	1	2.0	7	14.0	6.342	4	0.171
26-35	7	5	10.0	2	4.0			
36-45	13	8	16.0	5	10.0			
46-55	14	7	14.0	7	14.0			
>55	58	29	58.0	29	58.0			

This table depicts in group A 2% and in group B 14% of participants are of ≤25years of age,10% and 4% of participants in group A and B were between 26-35 years of age,16% and 10%of participants in group A and B were between 36-45 years to the age, Each group has 14% of participants in the age group between 46-55 years of age, 29% and 58% participants in group A and B were of age group >55 years of age group. Both groups were comparable as the difference was not statistically significant in terms of age according to subgroups between groups A and B (p-value of >0.05).

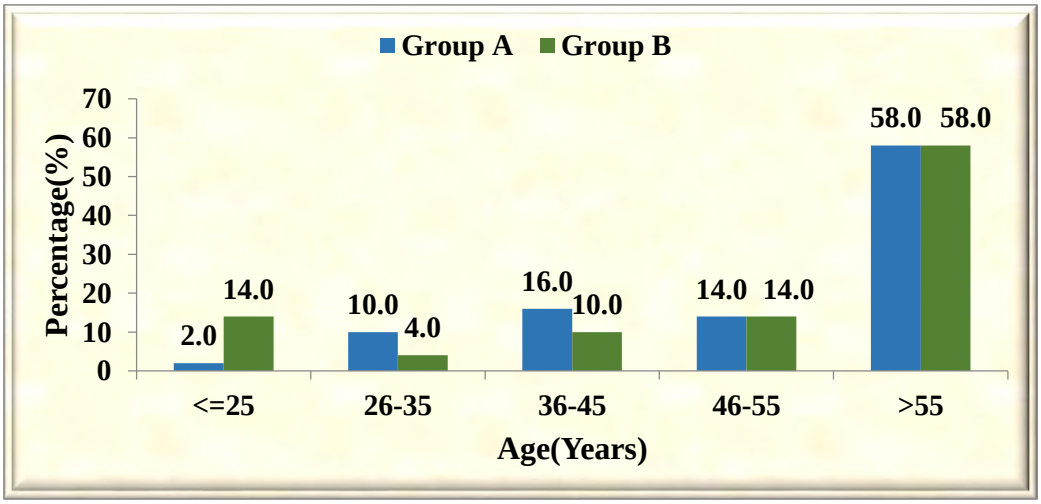


Figure 1- Distribution of Age According To Subgroups

Table 2

Gender distribution

Gender	N	Group A (Fentanyl) (n-50)		Group B (Dexmed+fentanyl) (n-50)		χ^2	df	p-value
		F	%	F	%			
Male	75	37	74.0	38	76.0	0.053	1	0.817
Female	25	13	26.0	12	24.0			

The distribution according to gender participation in this study was 74% male and 26% female in group A, 76% male and 24% female in group B. The two groups were comparable and the difference between each group was not statistically significant in terms of gender distribution (p-value of >0.05).

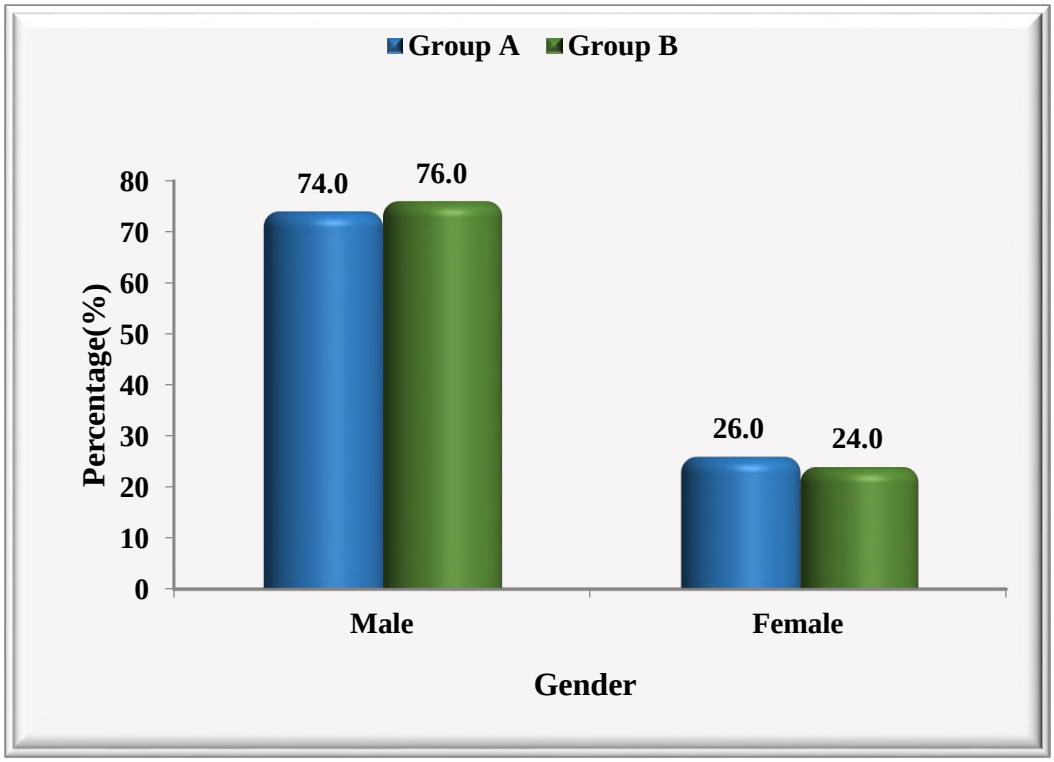


Figure 2- Distribution of gender according to groups

Table 3

Height distribution

	Group A (Fentanyl) (n-50) (Meter)	Group B (Dexmed+fentanyl) (n-50) (Meter)	Mean difference	t	df	p-value
Mean±SD	1.67±0.75	1.69±0.66	-0.023	-1.683	98	0.096
Range	1.6-1.8	1.5-1.8				

The mean height in meters in Group A and Group B was 1.67 ±0.75 and 1.69 ±0.66. Both groups were comparable as there was no statistically significant difference in mean height between the two groups (p-value of >0.05).

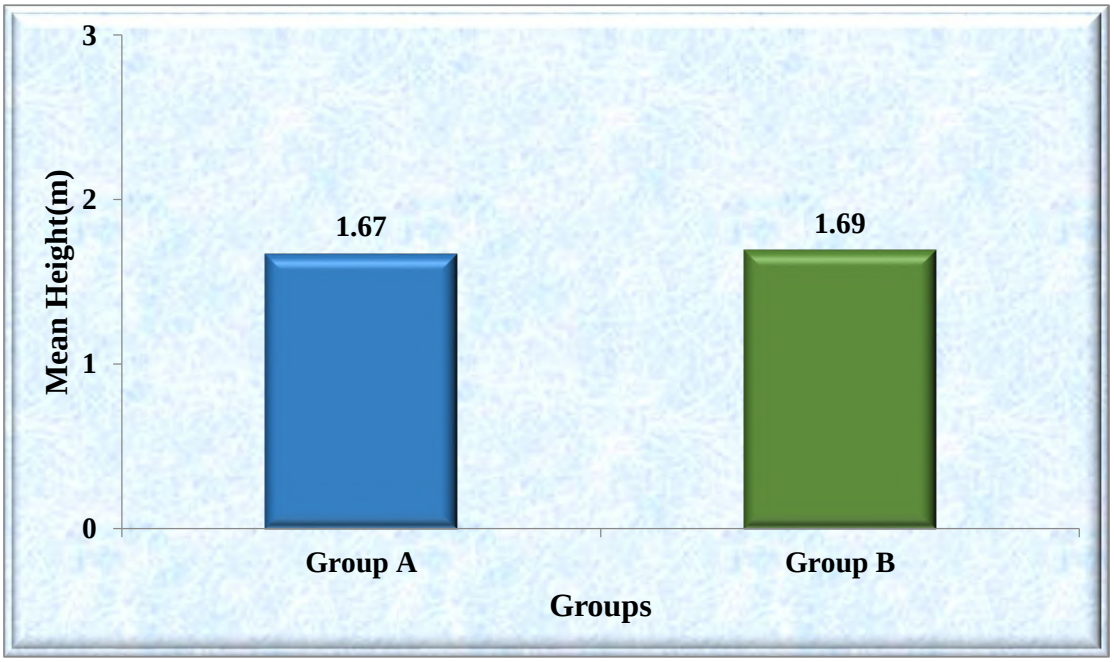


Figure 3- Mean difference in height (m) according to Groups

Table 4

Distribution of patients according to weight

	Group A (Fentanyl) (n-50) (Kg)	Group B (Dexmed+Fentanyl) (n-50) (Kg)	Mean difference	t-value	df	p-value
Mean±SD	70.26 ± 8.66	73.52 ± 11.45	-3.260	-1.605	98	0.112
Range	48-86	50-99				

This table depicts the mean weight in kilograms in group A and B was 70.26±8.06 and 73.52±11.45. Both groups were comparable as there was no statistically significant difference in terms of weight (p-value of >0.05).

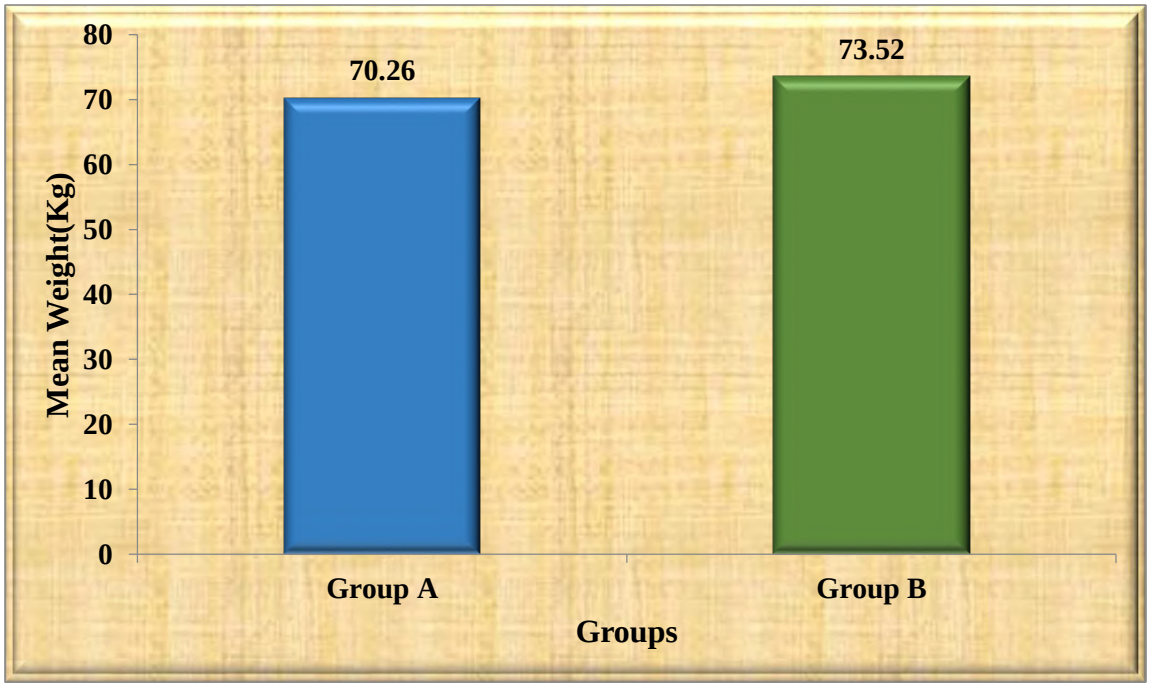


Figure 4- Mean difference in Weight (Kg.) according to Groups

Table 5

Distribution of patients according to BMI

	Group A (Fentanyl) (n-50)	Group B (Dexmed+Fentanyl) (n-50)	Mean difference	t-value	df	p-value
Mean±SD	25.18±2.90	25.58±3.63	-0.396	-0.601	98	0.549^{NS}
Range	16.6-31.8	16.6-40.8				

Mean Basal metabolic index in group A and B was 25.18±2.90 and 25.58±3.63. Both groups were comparable as the difference was not statistically significant in terms of BMI between the two groups (p-value of >0.05).

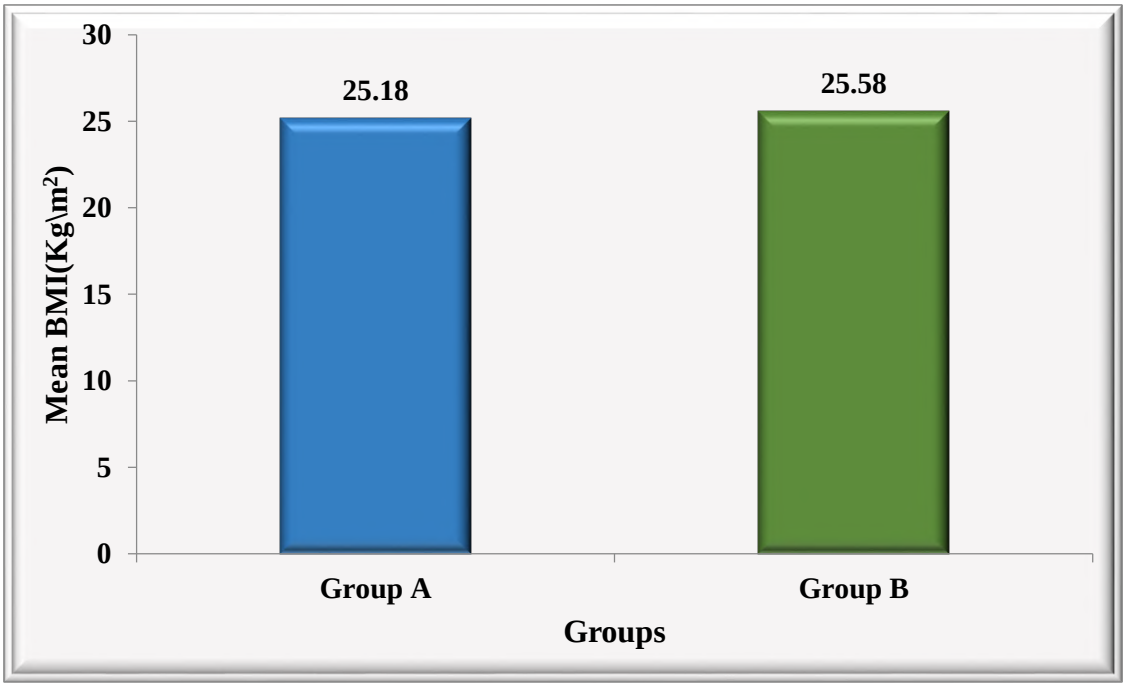


Figure 5- Mean difference in BMI(Kg/m^2) according to Groups

Table 6

Time of onset of sensory block

	Group A (Fentanyl) (n-50) (minutes)	Group B (Dexmed+Fentanyl) (n-50) (minutes)	Mean difference	t-value	df	p-value
Mean±SD	5.30±1.56	4.12±1.45	1.180	3.904	98	0.000
Range	0-10	0-10				

The mean time for onset of sensory block in group A and B was 5.30±1.56 and 4.12 ±1.45 minutes. The difference was statistically significant between the two groups in terms of the time for onset of sensory blockade (p-value of <0.05). This shows that the onset of sensory block was early in group B (Dexmedetomidine +fentanyl combination) compared to group A (fentanyl).

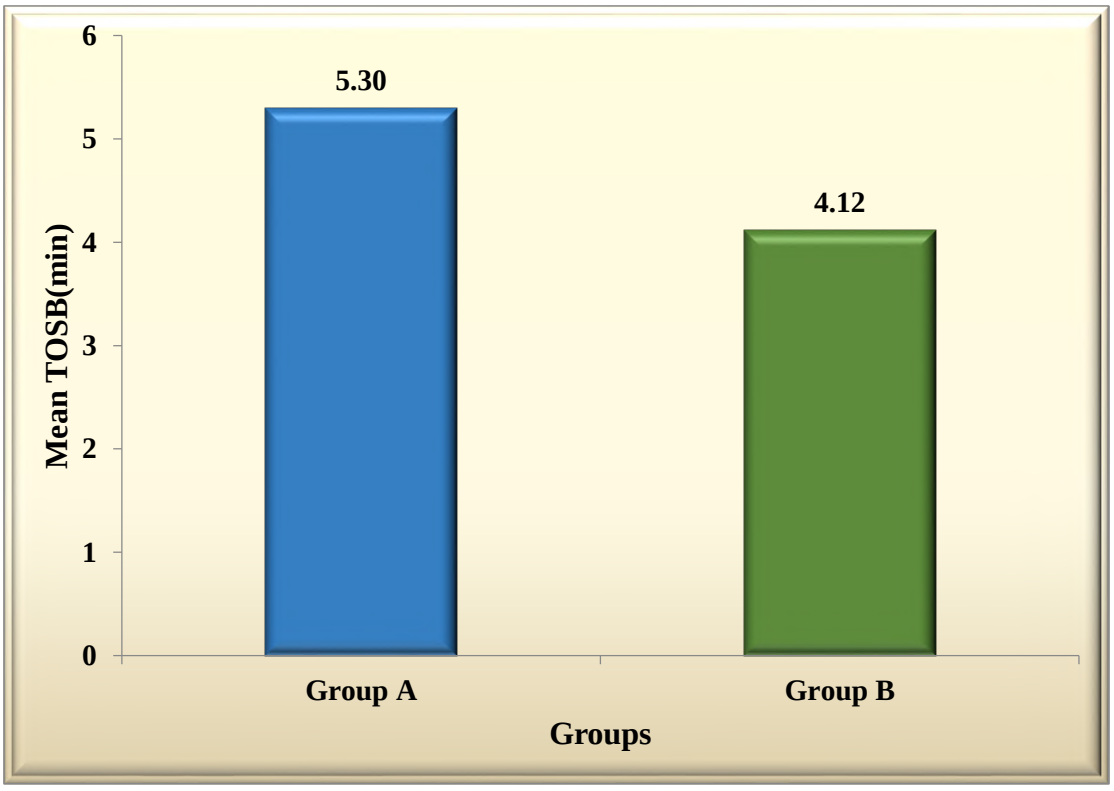


Figure 6- Time of onset of sensory block(min.) according to Groups

Table 7

Time of onset of motor block

	Group A (Fentanyl) (n-50) (Min.)	GroupB (Dexmed+fenatnyl) (n-50) (Min.)	Mean difference	t-value	df	p-value
Mean± SD	4.30±2.47	4.60±2.44	-0.300	-0.610	98	0.543
Range	0-10	0-10				

The mean time for onset of motor block in group A and B was 4.30 ±2.47 and 4.60±2.44 minutes. Both groups were comparable as the difference between both groups was not statistically significant in terms of onset of motor block (p-value of >0.05).

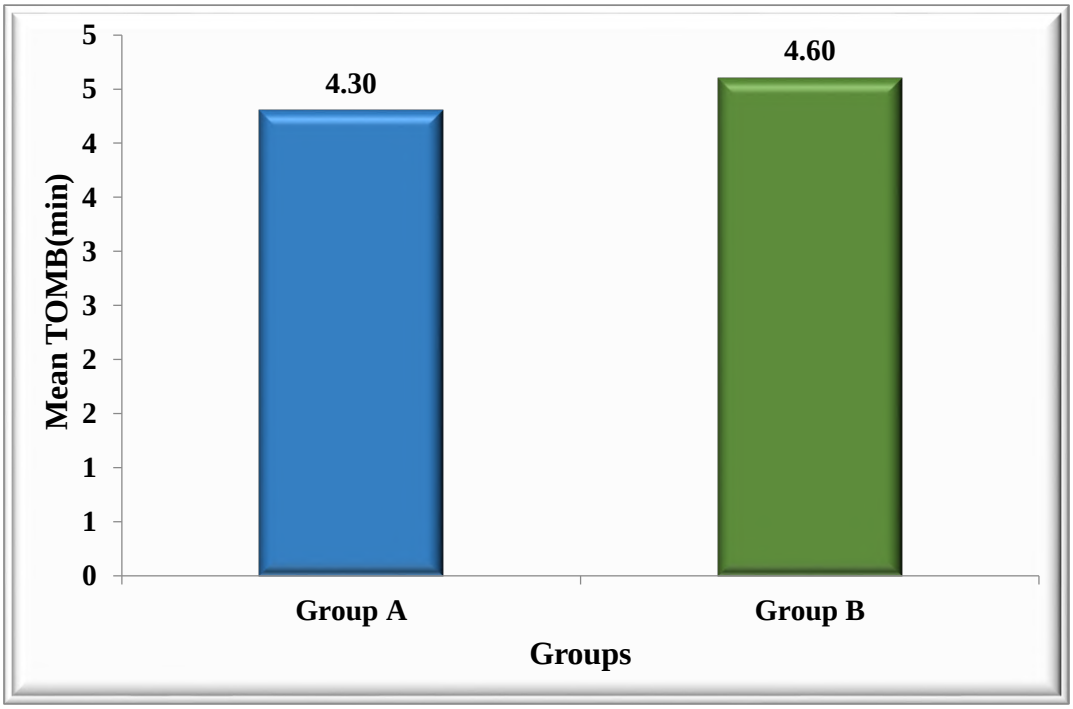


Figure 7- Time of onset of motor block (min.) according to Groups

Table 8

Highest level of sensory block

Highest Level	N	Group A (Fentanyl) (n-50)		GroupB (Dexmed+Fentanyl) (n-50)		χ^2	df	p-value
		F	%	F	%			
T7	1	1	2.0	0	0.0	3.944	3	0.250
T8	76	35	70.0	41	82.0			
T9	22	14	28.0	8	16.0			
T10	1	0	0.0	1	2.0			

The highest level of sensory block was T8, which was achieved by 80% of participants of group B and 70% of group A participants. The difference was not statistically significant in terms of the highest level of the sensory block between the two groups (p-value of >0.05). Thus, both groups were comparable.

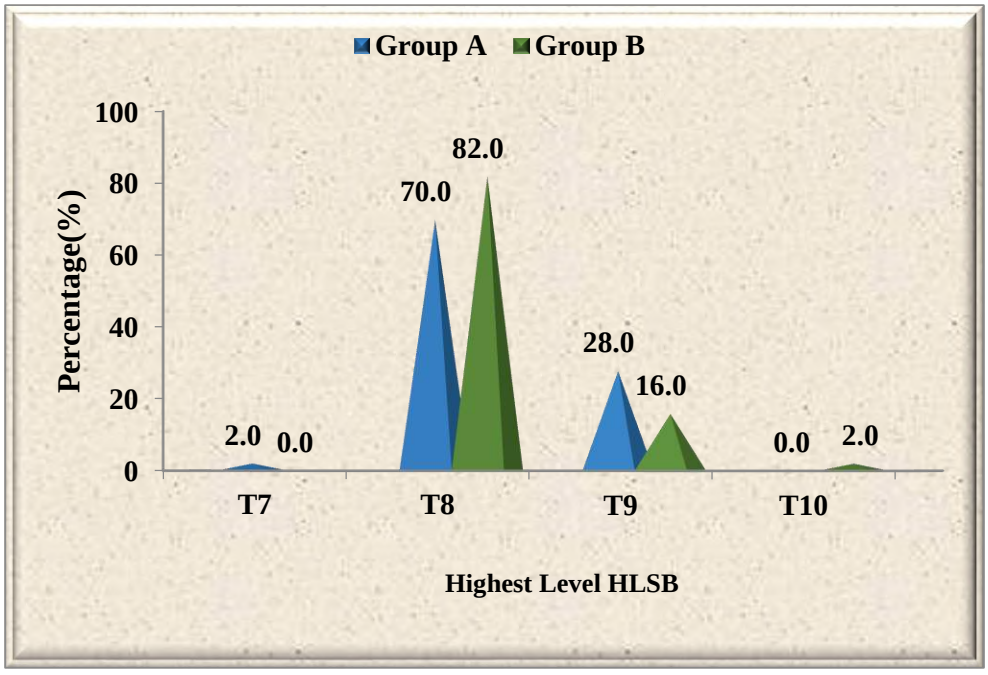


Figure 8- Distribution of Highest Level of the sensory block according to groups

Table 9

Time taken to reach the highest level of motor block

	Group A (Fentanyl) (n-50) (Min.)		Group B (Dexmed+Fentanyl) (n-50) (Min.)		t	p-value
	Mean	SD	Mean	SD		
Maximum Motor Block	8.2	3.31	10.4	3	-3.479	0.001
Range	5-15		5-15			

The time taken for highest level of the motor blockade in group A and B was 8.20±3.31 and 10.40±3.00 minutes. The difference between both groups was statistically significant in terms of the time taken for highest motor blockade level between both groups (p value<0.05), which means the maximum level of motor blockade was achieved late in group B compared to group A.

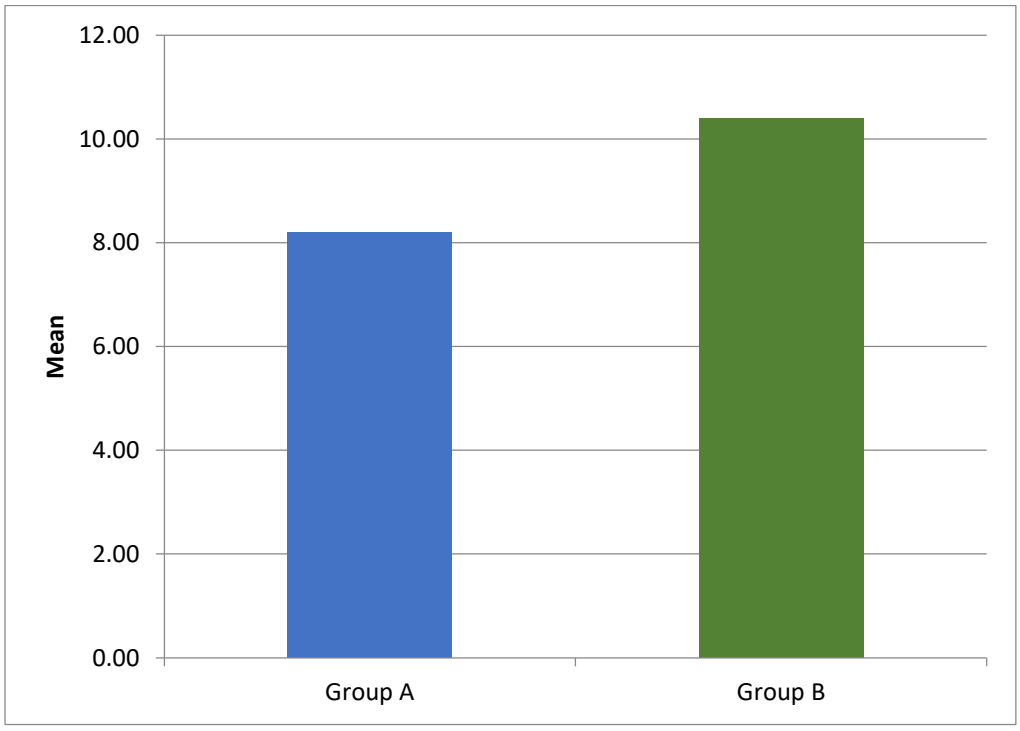


Figure 9- Highest level of motor block

Table 10
Duration of sensory block

	Group A (Fentanyl) (n-50) (Min.)	Group B (Dexmed+fentanyl) (n-50) (Min.)	Mean difference	t-value	df	p-value
Mean±SD	138.60±22.79	200.40±21.59	-61.800	-13.920	98	0.000
Range	105-195	135-240				

This table depicts the mean duration of sensory block in group A and B was 138.60±22.79 and 200.40±21.59 minutes respectively. The difference was statistically significant between the two groups in terms of duration of sensory block (p-value of < 0.05). This shows the duration of sensory block was prolonged in group B (Dexmedetomidine +fentanyl combination) as compared to group A (fentanyl).

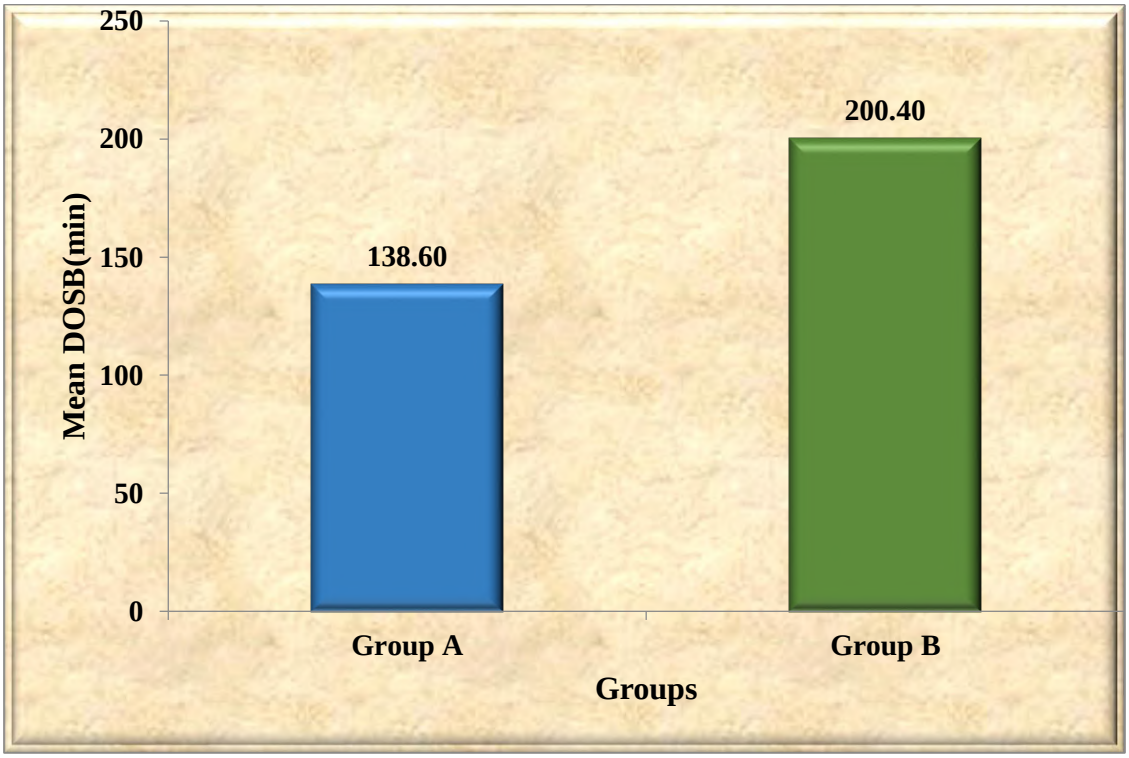


Figure 10- Mean Duration of sensory block (min) according to groups

Table 11

Duration of motor block

	Group A (Fentanyl) (n-50) (minutes)	Group B (Dexmed+fentanyl) (n-50) (minutes)	Mean difference	t-value	p-value
Mean±SD	147.90±23.67	259.50±23.32	-111.600	-23.745	0.000
Range	105-210	165-300			

This table depicts the mean duration of motor block in group A and B was 147.90±23.67 and 259.50±23.32 minutes. The difference between both groups in terms of duration of motor block was statistically significant (p-value of <0.05). It shows there is a prolongation of the motor blockade in group B as compared to the group A.

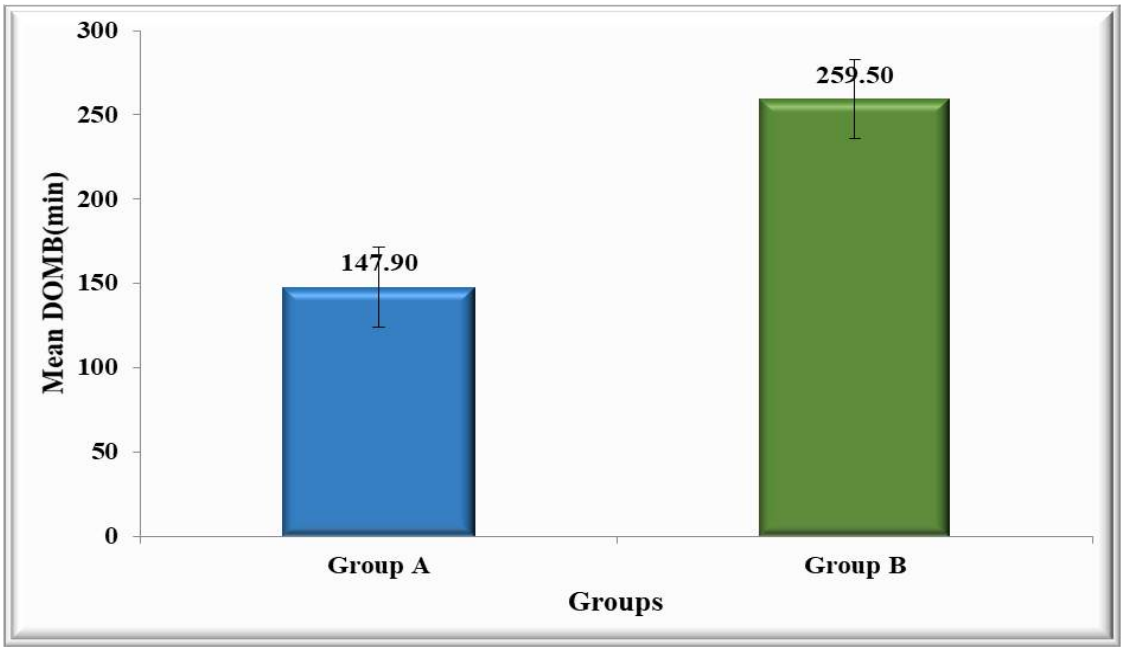


Figure 11- Mean difference in duration of motor block (min.) according to groups

Table 12
Duration of surgery

	Group A (Fentanyl) (n-50) (minutes)	Group B (Dexmed+Fentanyl) (n-50) (minutes)	Mean difference	t-value	df	p-value
Mean±SD	34.40±11.80	37.80±13.17	-3.400	-1.359	98	0.177
Range	15-60	15-60				

The mean duration of surgery in group A and B was 34.40±11.80 and 37.80±13.17 minutes. The duration of surgery is slightly more in group B, but the difference was statistically insignificant in terms of duration of surgery between both groups (p-value of >0.05).

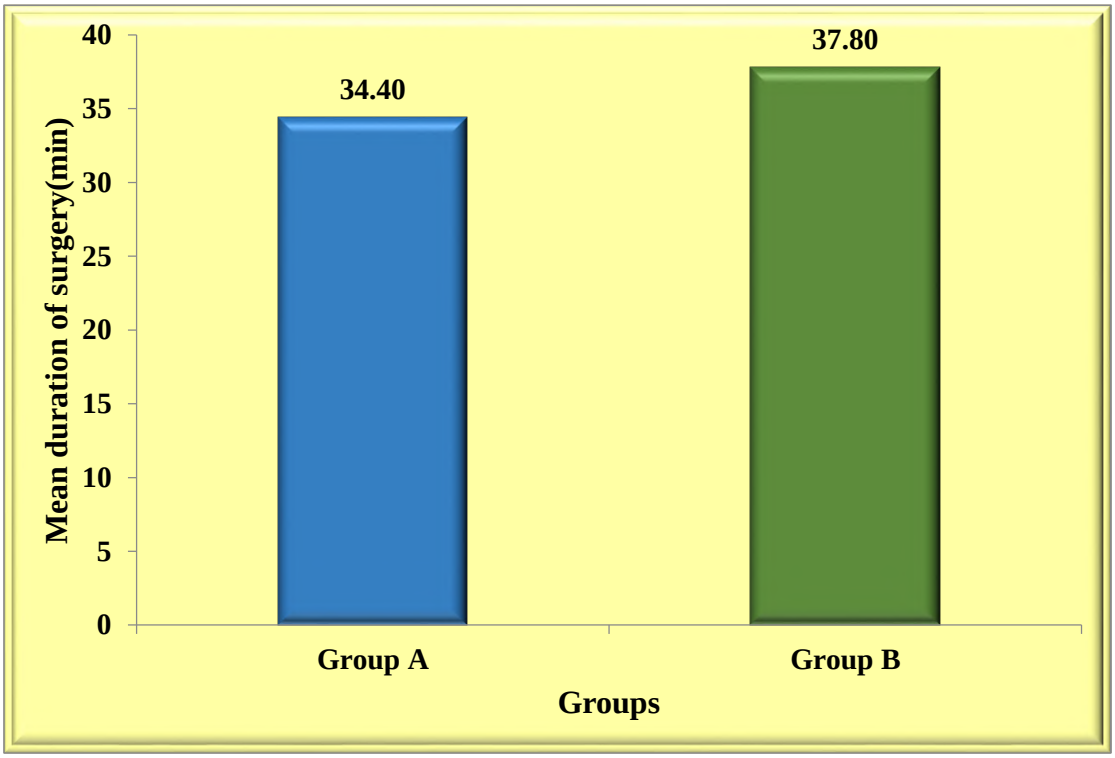


Figure 12- Mean difference in duration of surgery (min.) according to groups

Table 13

Trends in Intraoperative Heart rate

Pre-operative								
	Group	N	Mean	SD	Mean difference	t	df	p value
HR	Group A	50	82.26	8.04	0.30	0.16	98	0.868
	Group B	50	81.96	9.91				
Intra-operative								
Time	Group	N	Mean	SD	Mean difference	t	df	p-value
0 Minute	Group A	50	82.78	8.46	2.540	1.354	98	0.179
	Group B	50	80.24	10.20				
5 Minute	Group A	50	81.38	8.39	2.400	1.234	98	0.220
	Group B	50	78.98	10.89				
10 Minute	Group A	50	80.62	8.43	2.440	1.267	98	0.208
	Group B	50	78.18	10.69				
15 Minute	Group A	50	79.60	8.70	3.160	1.673	98	0.098
	Group B	50	76.44	10.13				
20 Minute	Group A	46	78.65	7.49	3.152	1.673	90	0.098
	Group B	46	75.50	10.35				
25 Minute	Group A	45	77.56	6.49	3.143	1.773	89	0.080
	Group B	46	74.41	10.00				
30 Minute	Group A	35	76.54	7.11	2.665	1.299	74	0.198
	Group B	41	73.88	10.19				
40 Minute	Group A	18	74.78	6.88	1.319	0.427	40	0.672
	Group B	24	73.46	11.65				
50 Minute	Group A	9	72.56	8.36	-1.291	-0.221	20	0.827
	Group B	13	73.85	15.99				
60 Minute	Group A	5	66.60	3.71	-5.200	-1.514	8	0.169
	Group B	5	71.80	6.72				

Baseline mean heart rate in groups A and B was 82.26±8.04 and 81.96±9.91, respectively. During the intraoperative period, there was no statistically significant difference found in heart rate at any time interval between both groups (p value>0.05).

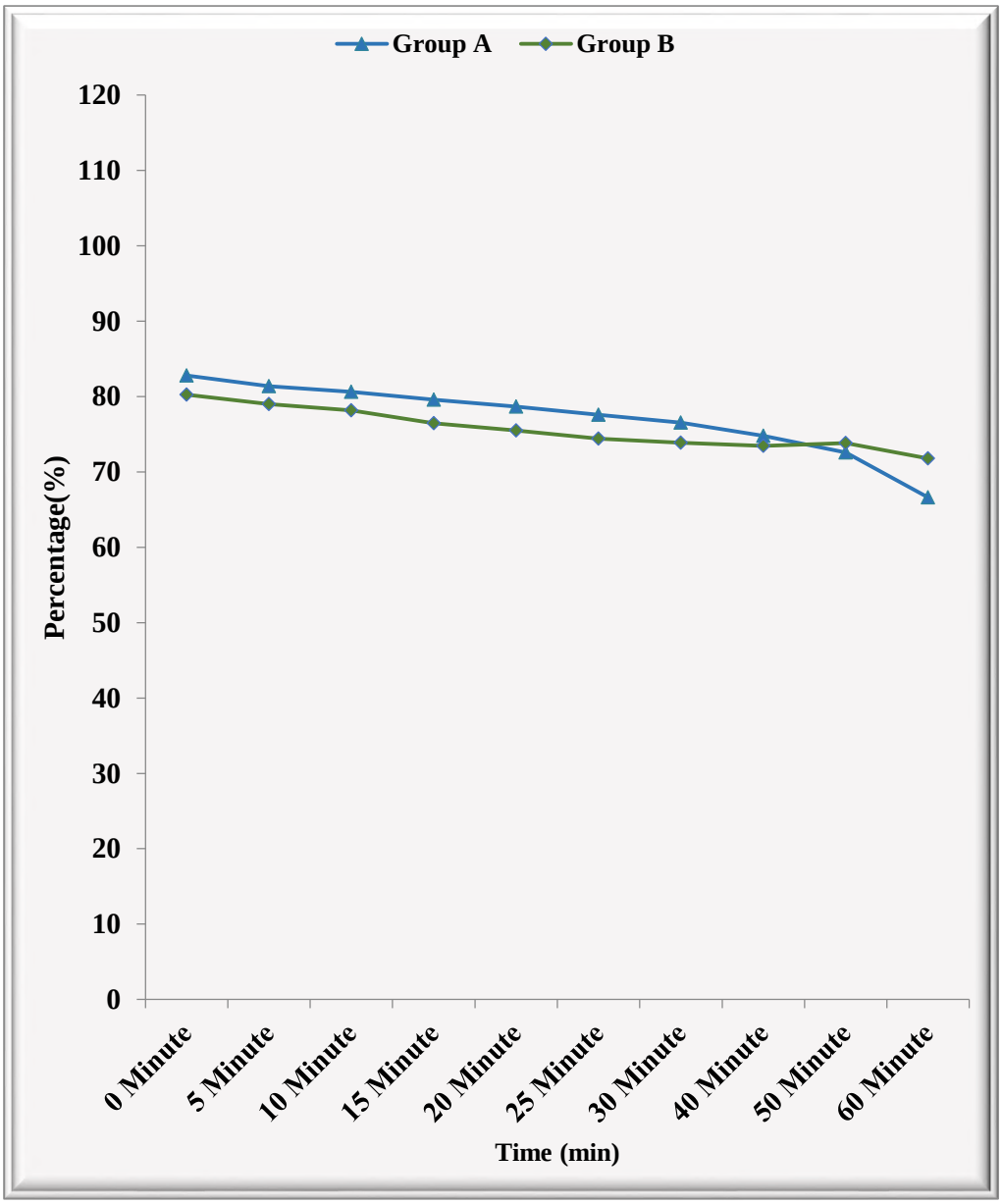


Figure 13- Trends in Intraoperative Heart rate

Table 14
Trends in intraoperative Systolic Blood Pressure

Pre-operative								
	Group	N	Mean	SD	Mean difference	t	df	p-value
SBP	Group A	50	134.40	13.45	-1.880	-0.712	98	0.478
	Group B	50	136.28	12.95				
Intra-operative								
Time	Group	N	Mean	Std Dev	Mean difference	t	df	p-value
0 Minute	Group A	42	134.14	13.89	-2.307	-0.746	80	0.458
	Group B	40	136.45	14.09				
5 Minute	Group A	44	129.95	13.57	-1.569	-0.566	84	0.573
	Group B	42	131.52	12.04				
10 Minute	Group A	47	125.36	11.64	-0.972	-0.410	93	0.683
	Group B	48	126.33	11.46				
15 Minute	Group A	50	119.60	7.12	-0.844	-0.166	12	0.87
	Group B	50	120.44	9.93				
20 Minute	Group A	49	117.33	12.32	-0.507	-0.200	95	0.842
	Group B	48	117.83	12.59				
25 Minute	Group A	46	117.13	10.03	0.630	0.278	90	0.782
	Group B	46	116.50	11.64				
30 Minute	Group A	35	119.29	10.17	1.357	0.527	75	0.600
	Group B	42	117.93	12.07				
40 Minute	Group A	17	122.59	10.76	2.047	0.565	39	0.575
	Group B	24	120.54	11.86				
50 Minute	Group A	9	126.00	11.95	5.231	1.091	20	0.288
	Group B	13	120.77	10.41				
60 Minute	Group A	5	119.60	7.12	-0.844	-0.166	12	0.87
	GroupB	9	120.44	9.93				

Baseline mean Systolic blood pressure in groups A and B was 134.40±13.45 and 136.28±12.95, respectively. During the intraoperative period, there was no statistically significant difference between two groups in terms of mean systolic blood pressure readings (p-value >0.05).

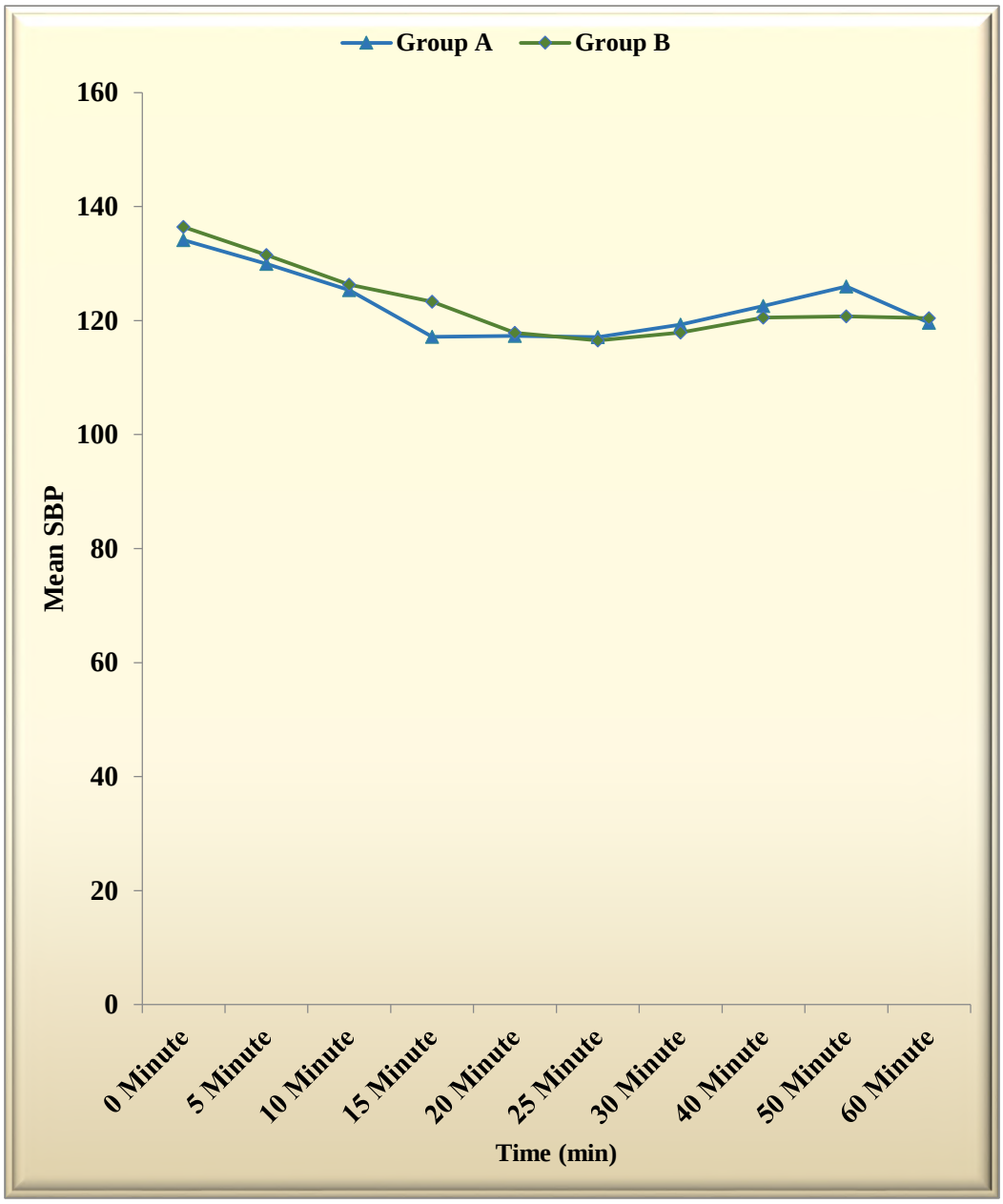


Figure 14- Trends in Intraoperative Systolic Blood Pressure

Table 15
Trends of Diastolic blood pressure during the intraoperative period

Pre-operative								
	Group	N	Mean	SD	Mean difference	t	df	p-value
DBP	Group A	50	83.92	9.21	1.040	0.553	98	0.582
	Group B	50	82.88	9.60				
Intra Operative								
Time	Group	N	Mean	Std Dev	Mean difference	t	df	p-value
0 Minute	Group A	50	82.92	9.06	0.340	1.354	98	0.179
	Group B	50	82.58	9.32				
5 Minute	Group A	50	78.82	7.60	0.560	1.234	98	0.220
	Group B	50	78.26	8.63				
10 Minute	Group A	50	77.54	7.82	0.300	1.267	98	0.208
	Group B	50	77.24	7.27				
15 Minute	Group A	50	73.12	9.20	-0.980	1.673	98	0.098
	Group B	50	74.10	7.51				
20 Minute	Group A	49	73.51	8.37	0.448	1.673	90	0.098
	Group B	48	73.06	8.57				
25 Minute	Group A	46	74.17	8.49	2.261	1.773	89	0.080
	Group B	46	71.91	8.88				
30 Minute	Group A	35	75.09	7.99	2.205	1.299	74	0.198
	Group B	42	72.88	8.54				
40 Minute	Group A	18	74.22	6.89	0.139	0.427	40	0.672
	Group B	24	74.08	7.94				
50 Minute	Group A	9	79.33	9.11	6.103	-0.221	20	0.827
	Group B	13	73.23	4.51				
60 Minute	Group A	5	72.80	10.73	-1.200	-1.514	8	0.169
	Group B	9	74.00	5.38				

Baseline mean Diastolic blood pressure in groups A and B was 83.92±9.21 and 82.88±9.60, respectively. The difference was not statistically significant in terms of diastolic blood pressure at any

interval during the intraoperative period between both groups (p value >0.05).

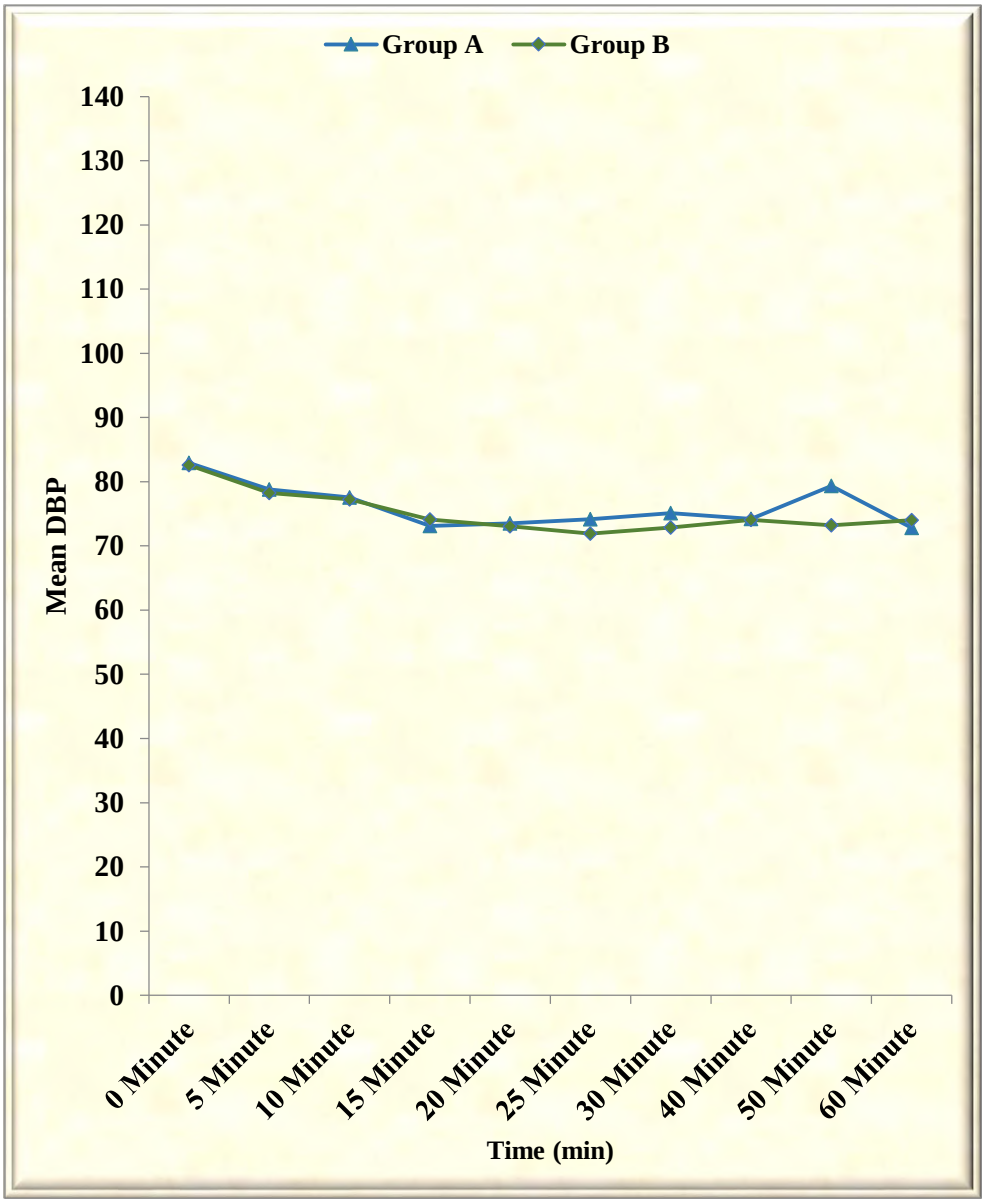


Figure 15- Trends of Mean Diastolic blood pressure during the intraoperative period

Table 16

Trends in Intraoperative Mean Arterial Blood pressure

Pre-operative								
	Group	N	Mean	SD	Mean difference	t	df	p-value
MAP	Group A	50	78.22	11.85	-2.760	-1.213	98	0.228
	Group B	50	80.98	10.88				
Intraoperative								
Time	Group	N	Mean	Std Dev	Mean difference	t	df	p-value
0 Minute	Group A	50	78.76	11.74	-4.240	-1.790	98	0.077
	Group B	50	83.00	11.94				
5 Minute	Group A	50	76.38	11.73	-3.920	-1.788	98	0.077
	Group B	50	80.30	10.13				
10 Minute	Group A	50	73.00	9.68	-2.180	-1.063	98	0.291
	Group B	50	75.18	10.80				
15 Minute	Group A	50	72.20	6.26	-9.229	-1.648	10	0.130
	Group B	50	81.43	11.23				
20 Minute	Group A	49	68.14	8.45	-1.690	-0.894	95	0.374
	Group B	48	69.83	10.11				
25 Minute	Group A	46	67.70	8.46	-2.370	-1.178	90	0.242
	Group B	46	70.07	10.70				
30 Minute	Group A	35	68.86	8.64	-1.875	-0.788	74	0.433
	Group B	41	70.73	11.59				
40 Minute	Group A	18	72.00	9.00	-2.542	-0.734	40	0.467
	Group B	24	74.54	12.42				
50 Minute	Group A	9	73.67	7.58	-3.410	-0.735	20	0.471
	Group B	13	77.08	12.33				
60 Minute	Group A	5	72.20	6.26	-9.229	-1.648	10	0.130
	Group B	7	81.43	11.23				

Baseline mean arterial pressure in groups A and B was 78.22±11.85 and 80.98±10.88. Both groups were comparable in terms of mean arterial pressure during the intraoperative period with no statistically significant difference (p-value >0.05).

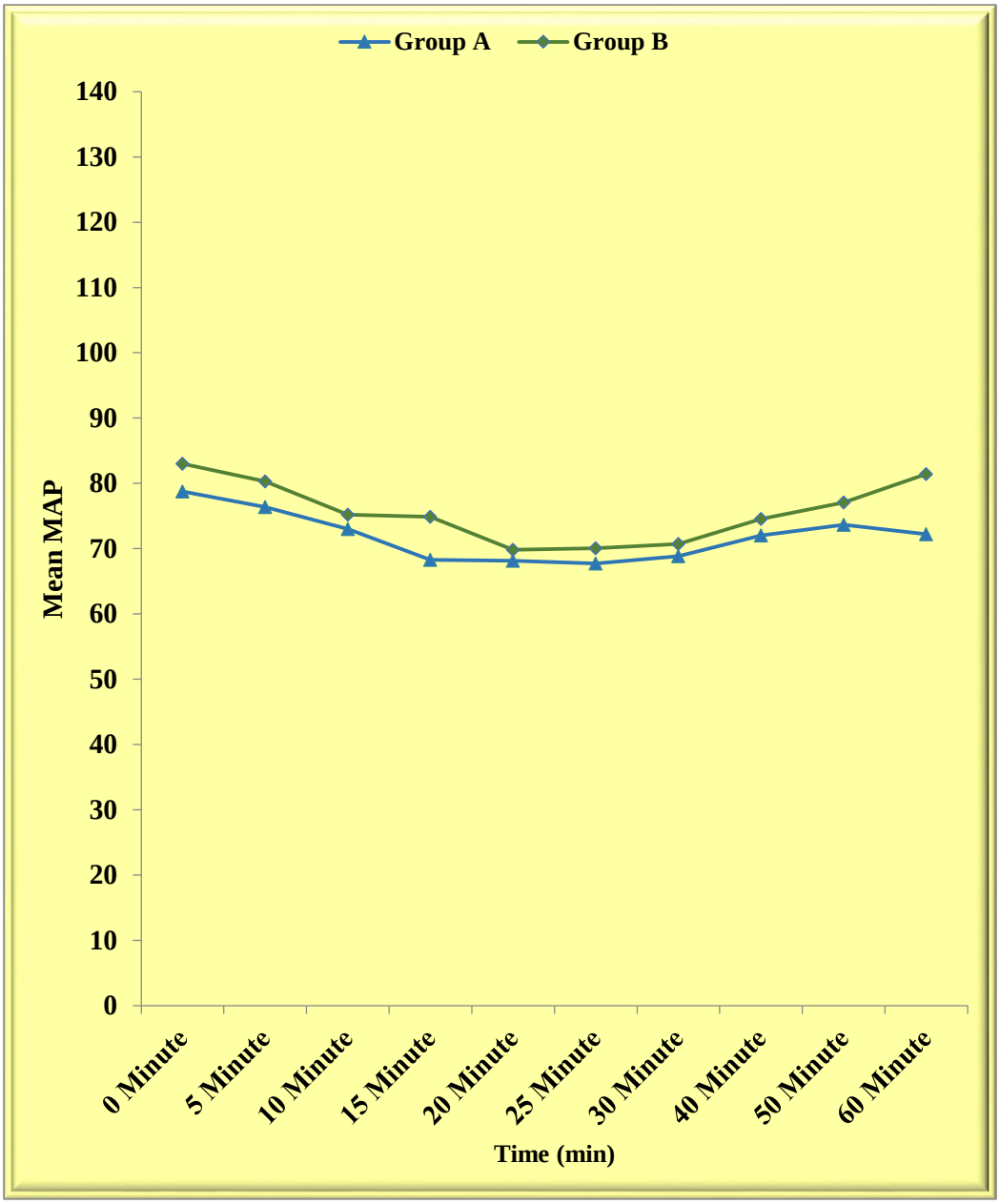


Figure 16- Trends in Intraoperative Mean Arterial Blood pressure

Table 17

Intraoperative Trends in Oxygen saturation

Time	Group	N	Mean	Std Dev	Mean difference	t	df	p-value
0 Minute	Group A	50	98.12	0.84	-0.180	-0.901	98	0.370
	Group B	50	98.30	1.12				
5 Minute	Group A	50	98.10	0.88	-0.100	-0.475	98	0.636
	Group B	50	98.20	1.19				
10Minute	Group A	50	98.06	0.89	0.000	0.000	98	1.000
	Group B	50	98.06	1.18				
15Minute	Group A	50	98.06	.091	-0.120	-0.582	98	0.562
	Group B	50	98.18	1.13				
20 Minute	Group A	49	97.96	0.88	1.668	0.913	95	0.364
	Group B	48	96.29	12.76				
25 Minute	Group A	46	98.02	0.93	-0.130	-0.609	90	0.544
	Group B	46	98.15	1.11				
30 Minute	Group A	35	98.06	0.80	-0.086	-0.390	75	0.697
	Group B	42	98.14	1.07				
40 Minute	Group A	18	98.00	0.97	-0.273	-0.745	38	0.461
	Group B	22	98.27	1.27				
50 Minute	Group A	9	98.22	0.66	-0.239	-0.541	20	0.594
	Group B	13	98.46	1.19				
60 Minute	Group A	5	98.40	0.89	-0.267	-0.495	12	0.630
	Group B	9	98.67	1.00				

During the Intraoperative period, there was no statistically significant difference between the two groups in terms of oxygen saturation (p-value >0.05). Thus, both groups were comparable.

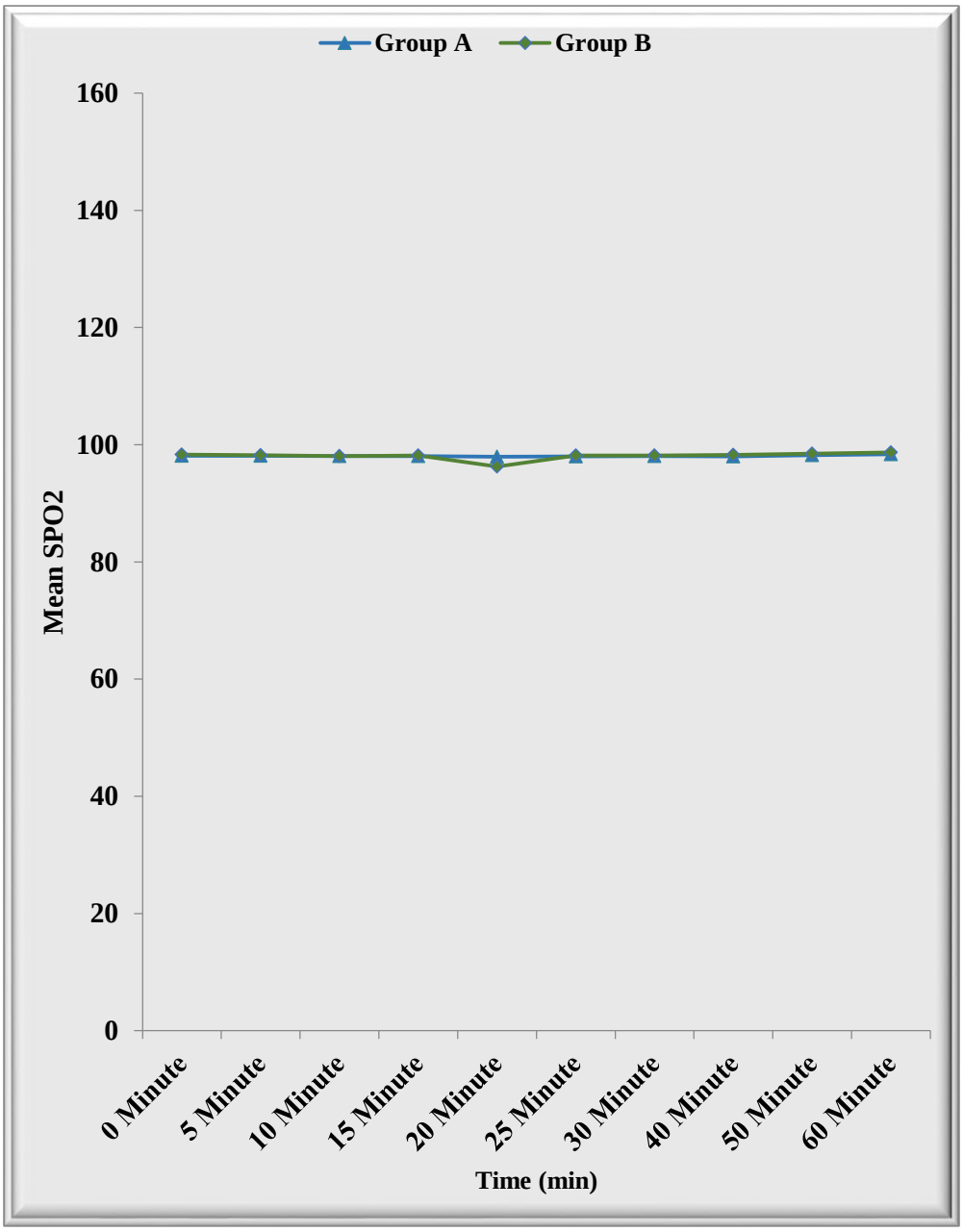


Figure 17- Intraoperative Trends in Oxygen saturation

Table 18

Trends in intraoperative Respiratory Rate

Pre-operative RR								
	Group	N	Mean	SD	Mean difference	t	df	p-value
RR	Group A	50	17.54	6.70	0.280	0.284	98	0.777
	Group B	50	17.26	1.94				
Intraoperative								
Time	Group	N	Mean	Std Dev	Mean difference	t	df	p-value
0 Minute	Group A	50	16.56	1.32	-0.620	-1.912	98	0.059
	Group B	50	17.18	1.87				
5 Minute	Group A	50	16.62	1.33	-0.380	-1.215	98	0.227
	Group B	50	17.00	1.76				
10 Minute	Group A	50	16.74	1.20	-0.280	-0.955	98	0.342
	Group B	50	17.02	1.68				
15 Minute	Group A	50	16.66	1.45	-0.540	-1.721	98	0.088
	Group B	50	17.20	1.67				
20 Minute	Group A	49	16.67	1.26	-0.431	-1.383	95	0.170
	Group B	48	17.10	1.76				
25 Minute	Group A	46	16.54	1.29	-0.648	-2.063	91	0.042
	Group B	47	17.19	1.70				
30 Minute	Group A	36	16.53	1.44	-0.495	-1.304	77	0.196
	Group B	43	17.02	1.85				
40 Minute	Group A	18	16.72	1.80	-0.878	-1.550	41	0.129
	Group B	25	17.60	1.84				
50 Minute	Group A	9	16.89	2.02	-1.342	-1.741	20	0.097
	Group B	13	18.23	1.58				
60 Minute	Group A	5	16.53	1.44	-0.495	-1.304	77	0.196
	Group B	10	17.02	1.85				

The baseline mean respiratory rate in groups A and B was 17.54±6.70 and 17.26±1.94. The difference was not statistically significant between both groups in terms of the respiratory rate at any time interval during the intraoperative period (p-value >0.05).

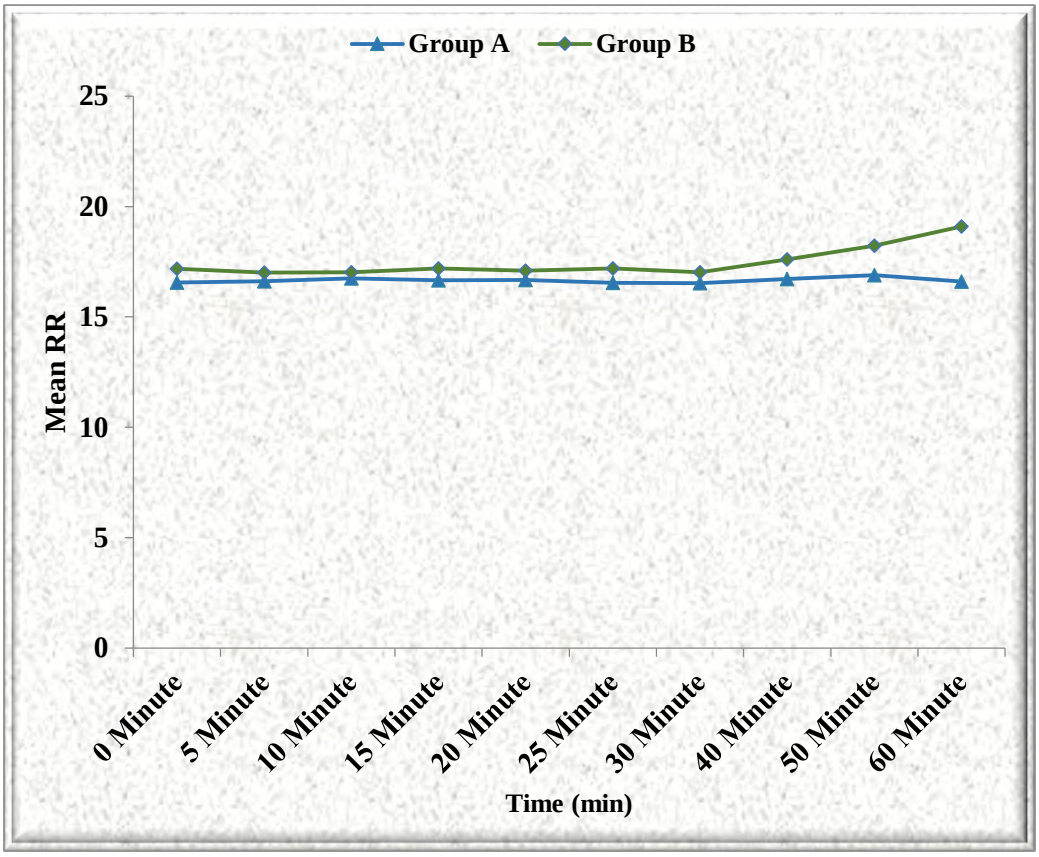


Figure 18-Trends in intraoperative Respiratory Rate

Table 19

Incidence of side effects: Intraoperative

		Group				Total	Chi-square value	p-value
		A		B				
Nausea /Vomiting	A	24	48%	27	54%	51	0.360	0.548
	P	26	52%	23	46%	49		
Pruritis	A	11	22%	29	58%	40	13.500	0.001
	P	39	78%	21	42%	60		
Hypotension	A	24	48%	24	48%	48	0.000	1.000
	P	26	52%	26	52%	52		

Mean incidence of nausea/vomiting in group A and B was 52% and 46%, which means nausea /vomiting was observed more in group A than group B, but the difference was not statistically significant between both groups (p-value >0.05). Mean incidence of intraoperative pruritis in groups A and B was 78% and 42%, which means pruritis was observed more in group A as compared to group B and there was a statistically significant difference between both groups (p-value of <0.05). Mean incidence of intraoperative hypotension in groups A and B was 52% and 52%, which shows the incidence of hypotension was same in both groups with a statistically insignificant difference (p-value >0.05).

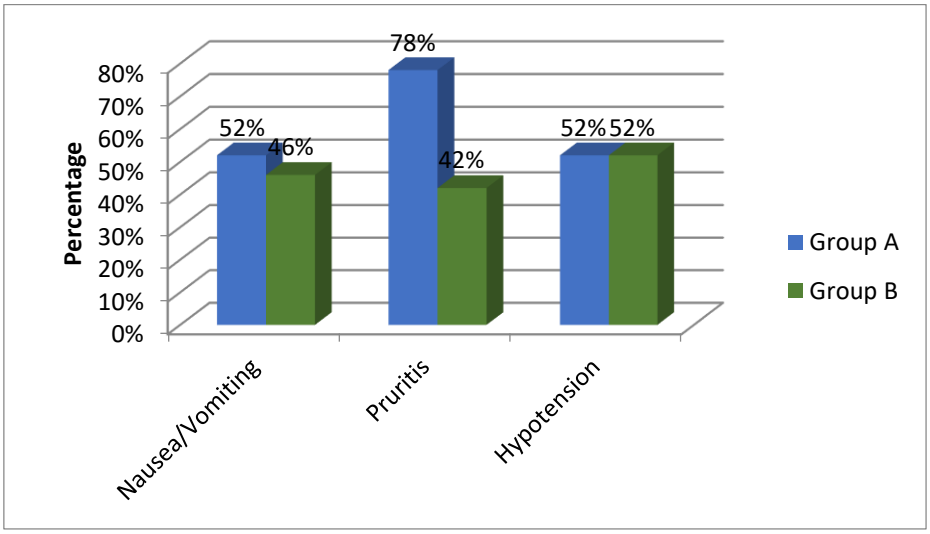


Figure 19- Incidence of side effects: Intraoperative

Table 20

Trends in Post-operative Heart Rate

	Group A		Group B		p-value	95% Confidence Interval of the Difference	
Time	Mean	SD	Mean	SD		Lower	Upper
0 Minutes	78.22	8.31	74.58	10.85	0.063	-0.20	7.48
15 Minutes	77.52	7.35	74.64	10.96	0.126	-0.82	6.58
30 Minutes	77.86	7.23	73.68	10.41	0.022	0.62	7.74
45 Minutes	77.54	6.66	74.40	11.03	0.088	-0.48	6.76
1 hour	77.56	6.35	74.98	10.67	0.145	-0.90	6.06
1.5 Hour	78.48	7.54	76.96	9.43	0.376	-1.87	4.91
2 Hour	78.10	7.17	76.96	9.43	0.498	-2.18	4.46
2.5Hour	79.68	7.10	77.46	8.08	0.148	-0.80	5.24
3 Hour	78.42	6.74	78.08	8.34	0.825	-2.68	3.36
3.5 Hour	79.06	6.96	78.00	8.46	0.495	-2.01	4.13
4 Hour	78.34	7.81	78.12	8.53	0.893	-3.03	3.47
8 Hour	79.00	7.95	78.62	8.03	0.812	-2.79	3.55
12 Hour	79.62	6.83	79.08	8.19	0.721	-2.45	3.53
16 Hour	79.80	7.76	79.22	8.14	0.716	-2.58	3.74
20 Hour	79.74	7.83	78.92	7.85	0.602	-2.29	3.93
24 Hour	79.18	7.67	79.14	8.96	0.981	-3.27	3.35

During post-operative period there was no statistically significant difference in mean heart rate readings at any time interval between both the groups (p value is >0.05).

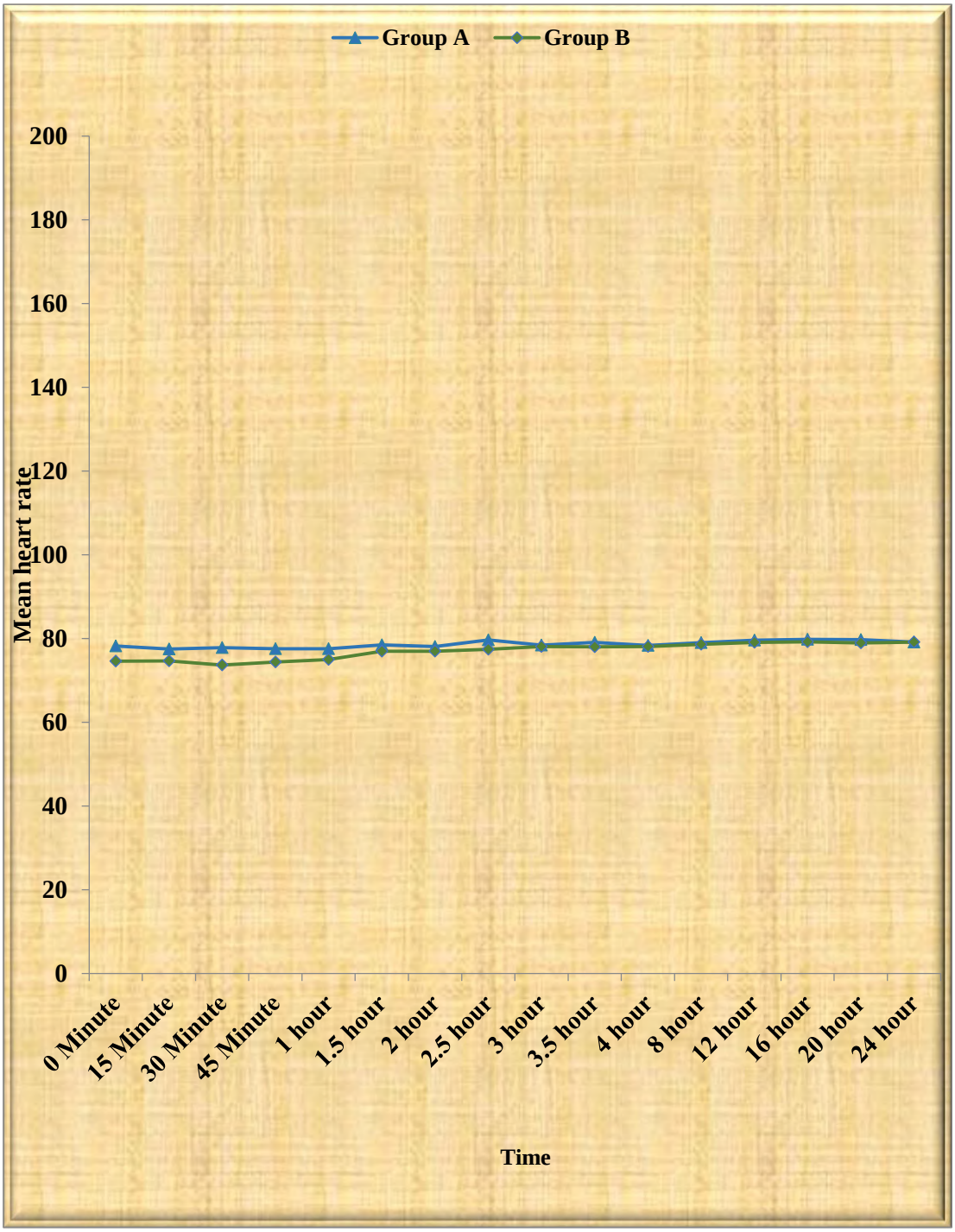


Figure 20- Trends in Postoperative Heart Rate

Table 21

Trends in Systolic Blood Pressure: Postoperative

	Group A		Group B		p-value	95% Confidence Interval of the Difference	
Time	Mean	SD	Mean	SD		Lower	Upper
0 Minutes	124.12	8.69	121.48	8.44	0.126	-0.76	6.04
15 Minutes	124.28	7.73	122.04	8.97	0.184	-1.08	5.56
30Minutes	124.80	9.64	124.12	8.75	0.713	-2.97	4.33
45 Minutes	125.84	7.77	125.08	8.12	0.634	-2.39	3.91
1Hour	126.88	7.57	125.24	7.16	0.268	-1.28	4.56
1.5Hour	128.60	8.13	127.08	8.65	0.368	-1.81	4.85
2 Hour	128.56	8.06	127.00	8.50	0.349	-1.73	4.85
2.5 Hour	129.12	7.76	127.56	8.10	0.328	-1.59	4.71
3Hour	128.54	8.79	127.88	7.11	0.681	-2.51	3.83
3.5Hour	129.28	8.46	129.40	7.99	0.942	-3.39	3.15
4Hour	130.20	8.04	127.68	8.62	0.134	-0.79	5.83
8 Hour	130.52	8.48	128.32	8.20	0.190	-1.11	5.51
12 Hour	130.12	9.11	129.28	6.81	0.603	-2.35	4.03
16 Hour	131.06	7.32	129.08	7.99	0.199	-1.06	5.02
20 Hour	130.76	8.13	130.20	7.79	0.726	-2.60	3.72
24 Hour	132.20	7.95	132.04	8.53	0.923	-3.11	3.43

During the postoperative period, mean systolic blood pressure readings were comparable in groups A and B with no statistically significant difference (p-value >0.05).

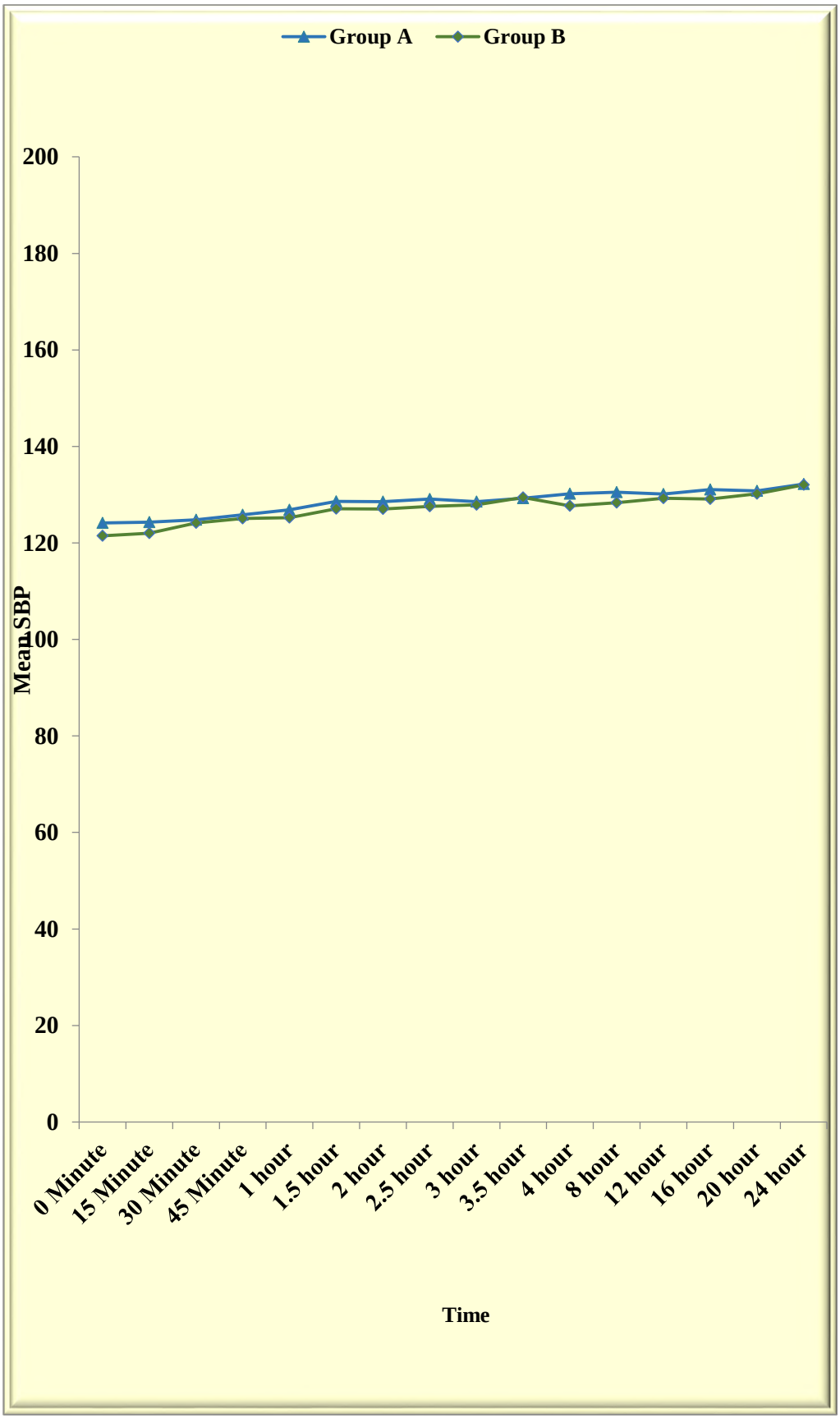


Figure 21- Trends in Systolic Blood Pressure: Postoperative

Table 22

Trends in Diastolic Blood Pressure: Postoperative

	Group A		Group B		p-value	95% Confidence Interval of the Difference	
Time	Mean	SD	Mean	SD		Lower	Upper
0 Minutes	76.36	6.03	77.26	6.20	0.464	0.07	4.57
15 Minutes	76.24	5.86	75.24	6.46	0.420	-1.45	3.45
30 Minutes	76.46	7.89	76.84	5.74	0.784	-3.12	2.36
45 Minutes	77.78	7.73	75.42	4.85	0.112	1.42	6.10
1 Hour	78.28	6.60	77.28	5.96	0.429	-1.50	3.50
1.5 Hour	77.62	6.82	77.12	6.98	0.718	-2.24	3.24
2 Hour	75.72	6.69	76.90	6.95	0.389	-3.89	1.53
2.5 Hour	77.78	7.73	77.58	6.31	0.888	-2.60	3.00
3 Hour	76.36	6.03	77.26	6.20	0.464	-3.33	1.53
3.5 Hour	78.20	8.86	78.72	6.14	0.734	-3.55	2.51
4 Hour	77.40	7.85	75.76	7.67	0.293	-1.44	4.72
8 Hour	75.94	12.05	75.20	6.99	0.708	-3.17	4.65
12 Hour	78.64	8.11	78.00	7.18	0.677	-2.40	3.68
16 Hour	75.44	7.04	76.04	7.24	0.675	-3.43	2.23
20 Hour	76.94	6.47	76.52	6.78	0.752	-2.21	3.05
24 Hour	77.74	7.45	79.20	7.08	0.318	-4.34	1.42

During post-operative period there was no statistically significant difference in mean diastolic blood pressure readings at any time interval between two groups (p-value >0.05).

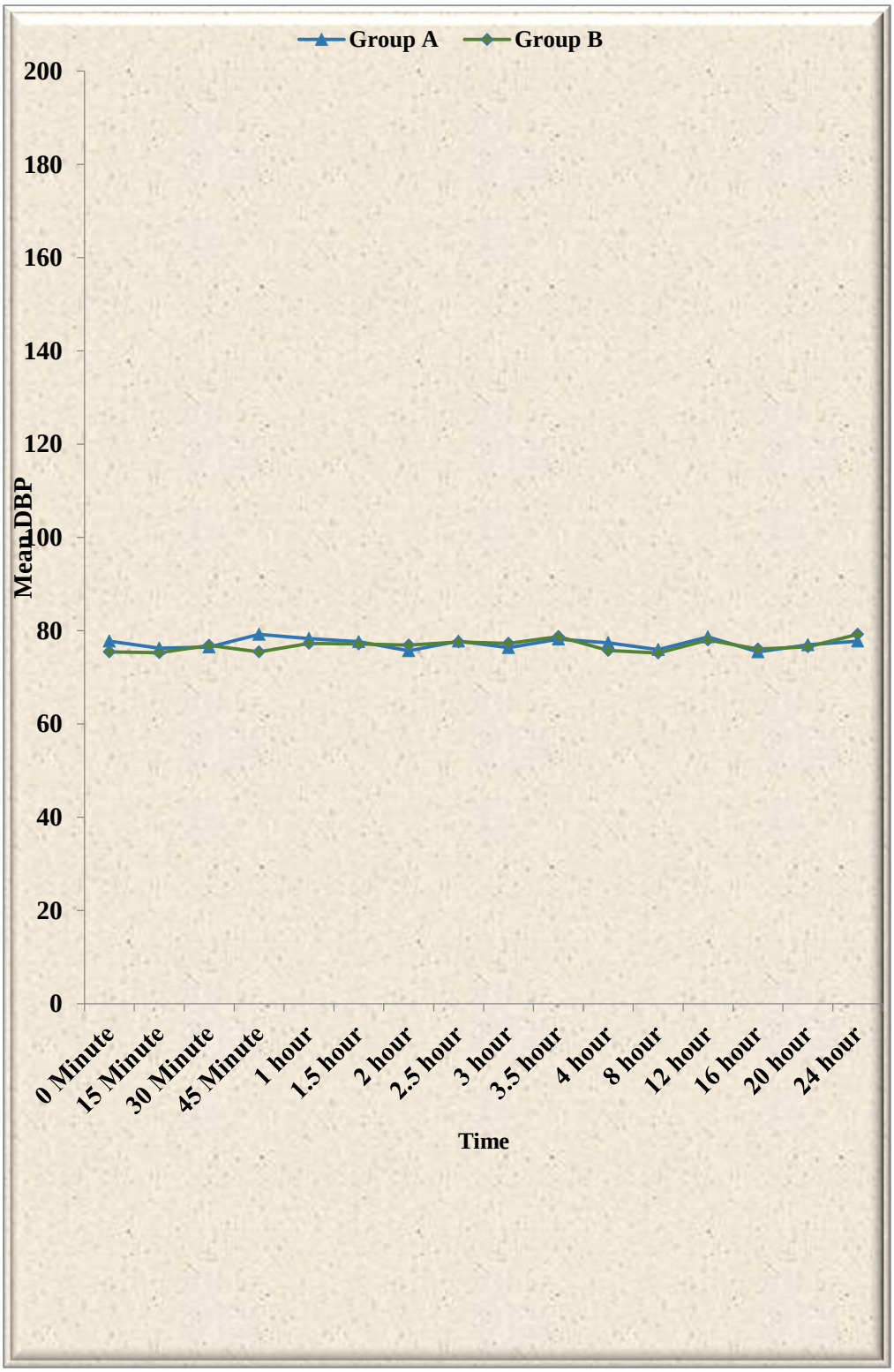


Figure 22- Trends in Diastolic Blood Pressure: Postoperative

Table 23

Trends in Mean Arterial Pressure: Postoperative

	Group A		Group B		p-value	95% Confidence Interval of the Difference	
Time	Mean	SD	Mean	SD		Lower	Upper
0 Minutes	73.08	7.91	72.98	8.87	0.953	-3.24	3.44
15 Minutes	74.00	6.11	72.28	7.89	0.226	-1.08	4.52
30 Minutes	74.26	8.15	73.12	8.03	0.483	-2.07	4.35
45 Minutes	72.78	7.18	74.70	7.55	0.196	-4.84	1.00
1 Hour	74.94	7.25	73.80	5.69	0.384	-1.44	3.72
1.5 Hour	75.82	6.96	75.14	8.17	0.655	-2.33	3.69
2 Hour	78.28	8.23	75.84	7.73	0.130	-0.73	5.61
2.5 Hour	77.42	7.70	76.56	7.32	0.568	-2.12	3.84
3 Hour	77.92	8.21	76.34	7.12	0.306	-1.47	4.63
3.5 Hour	78.24	6.80	77.04	7.49	0.404	-1.64	4.04
4 Hour	78.88	7.37	77.96	7.40	0.535	-2.01	3.85
8 Hour	78.28	8.16	78.06	7.28	0.887	-2.85	3.29
12 Hour	78.50	6.90	76.90	6.27	0.228	-1.02	4.22
16 Hour	79.84	7.02	78.16	7.35	0.245	-1.17	4.53
20 Hour	80.26	7.59	79.42	7.22	0.572	-2.10	3.78
24 Hour	80.27	6.35	79.08	7.61	0.403	-1.61	3.98

Mean arterial pressure in the postoperative period was comparable in groups A and B at all time intervals until 24 hours. There was no statistically significant difference between groups A and B (p-value >0.05).

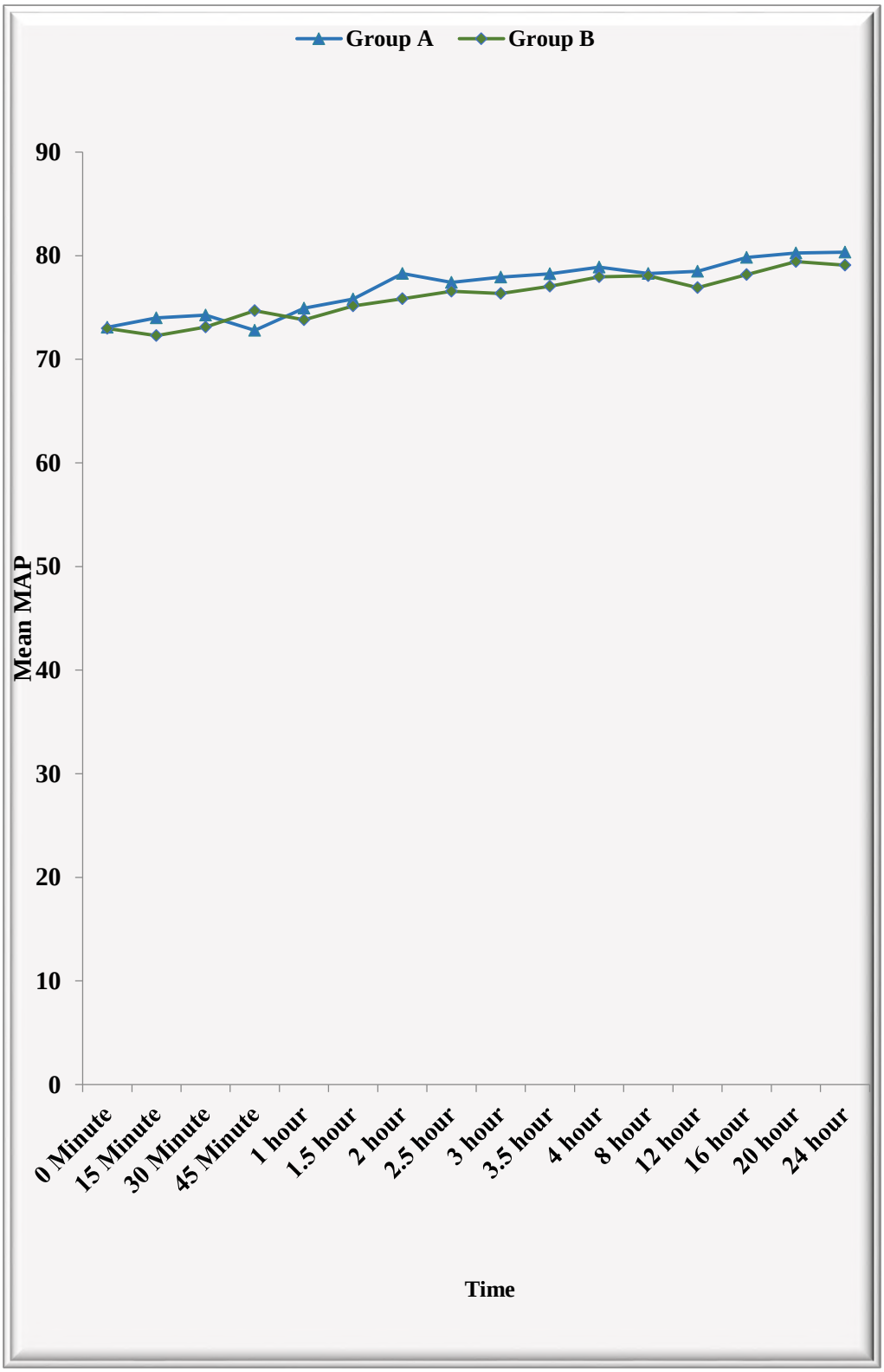


Figure 23- Trends in Mean Arterial Pressure: Postoperative

Table 24

Trends in Respiratory Rate: Postoperative

	Group A		Group B		p-value	95% Confidence Interval of the Difference	
Time	Mean	SD	Mean	SD		Lower	Upper
0 Minutes	16.74	1.31	18.50	8.93	0.171	-4.29	0.77
15 Minutes	16.74	1.43	18.28	9.89	0.279	-4.35	1.27
30 Minutes	16.90	1.28	16.94	1.66	0.893	-0.63	0.55
45 Minutes	16.64	1.22	19.00	14.65	0.259	-6.49	1.77
1 Hour	16.78	1.17	17.20	1.63	0.141	-0.98	0.14
1.5 Hour	16.82	1.22	17.24	1.86	0.185	-1.04	0.20
2 Hour	16.84	1.23	17.04	1.68	0.499	-0.78	0.38
2.5 Hour	16.90	1.20	17.18	1.78	0.359	-0.88	0.32
3 Hour	16.92	1.24	17.08	1.74	0.597	-0.76	0.44
3.5 Hour	19.80	20.41	17.18	1.75	0.368	-3.13	8.37
4 Hour	18.06	9.17	17.08	1.65	0.459	-1.64	3.60
8 Hour	18.66	11.66	17.34	2.23	0.434	-2.01	4.65
12 Hour	18.44	11.55	17.04	1.81	0.399	-1.88	4.68
16 Hour	18.48	11.55	17.26	1.80	0.462	-2.06	4.50
20 Hour	18.38	11.42	17.20	1.77	0.472	-2.06	4.42
24 Hour	18.50	11.54	17.22	1.68	0.440	-1.99	4.55

Mean respiratory rate during the postoperative time was comparable between groups A and B. The difference was not statistically significant in terms of the respiratory rate at any interval of time till 24 hours (p-value of >0.05).

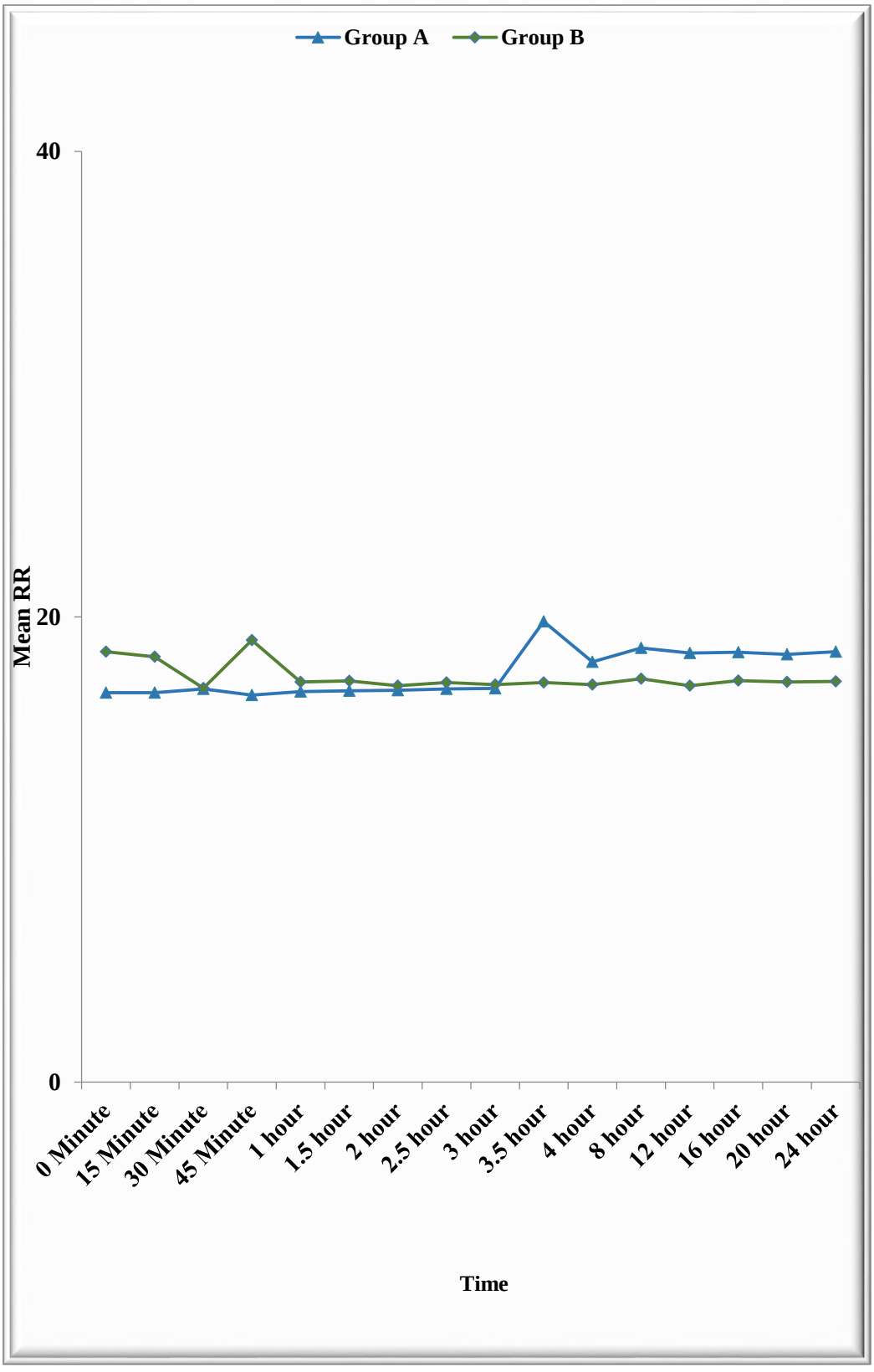


Figure 24- Trends in Respiratory Rate: Postoperative

Table 25

Trends in Oxygen Saturation: Postoperative

	Group A		Group B		p-value	95% Confidence Interval of the Difference	
Time	Mean	SD	Mean	SD		Lower	Upper
0 Minute	94.94	16.20	96.66	11.68	0.604	-7.32	3.88
15Minute	98.04	0.97	98.24	0.98	0.415	-0.59	0.19
30Minute	97.94	0.87	98.04	0.95	0.686	-0.46	0.26
45Minute	97.88	0.85	98.12	0.94	0.215	-0.60	0.12
1Hour	98.06	0.84	97.98	0.94	0.435	-0.27	0.43
1.5 Hour	98.06	0.93	98.14	0.88	0.954	-0.44	0.28
2 Hour	97.86	0.99	98.06	0.87	0.266	-0.57	0.17
2.5 Hour	97.84	0.98	98.08	1.03	0.402	-0.64	0.16
3 Hour	97.86	0.83	98.06	0.98	0.430	-0.56	0.16
3.5 Hour	97.94	0.91	97.98	0.84	0.960	-0.39	0.31
4 Hour	98.04	0.83	98.04	0.95	0.646	-0.35	0.35
8 Hour	97.92	0.97	98.12	0.98	0.413	-0.59	0.19
12 Hour	97.86	0.97	98.16	0.89	0.127	-0.67	0.07
16 Hour	97.90	0.84	98.14	0.99	0.320	-0.60	0.12
20 Hour	97.92	0.92	98.18	0.92	0.125	-0.63	0.11
24 Hour	97.92	0.83	98.20	0.88	0.171	-0.62	0.06

During postoperative period, both groups were comparable as the difference between both the groups was not statistically significant in terms of oxygen saturation readings (p-value of >0.05).

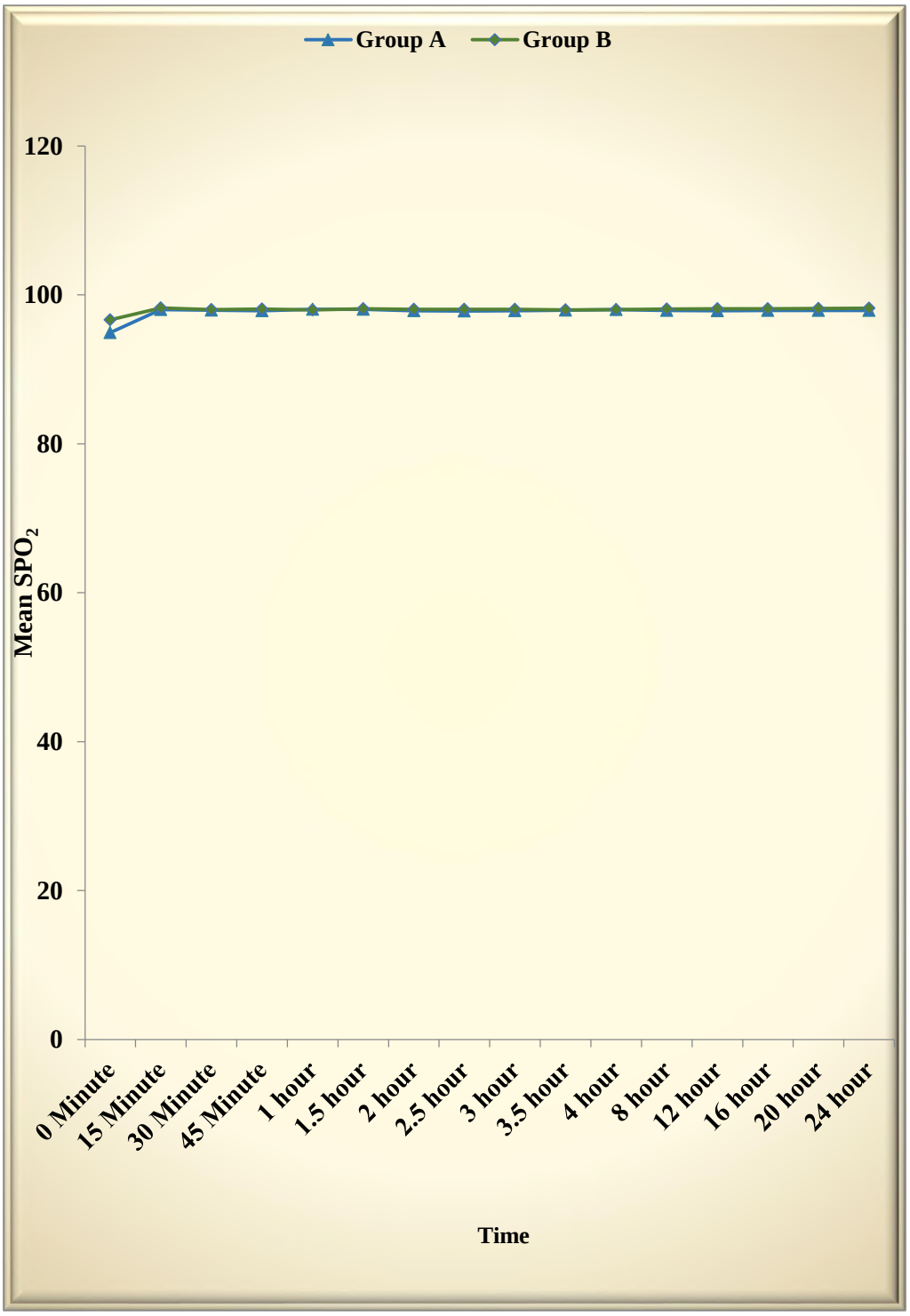


Figure 25- Trends in Oxygen Saturation: Postoperative

Table 26

Incidence of side effects: Postoperative period

		Group				Total	Chi-square value	p-value
		A		B				
Nausea /vomiting	A	30	60%	34	68%	64	0.694	0.405
	P	20	40%	16	32%	36		
Pruritis	A	36	72%	49	98%	85	13.255	0.001
	P	14	28%	1	2%	15		
Hypotension	A	32	64%	29	58%	61	0.378	0.539
	P	18	36%	21	42%	39		
Total		50	100%	50	100%	100		

A= Absent **P= Present**

Mean incidence of Nausea and Vomiting during the postoperative period in groups A and B was 40% and 32%. It means nausea and vomiting was more in group A as compared to group B, but there was no statistically significant difference between groups A and B (p-value >0.05). The mean incidence of pruritis in group A and B was 28% and 2%, which means more pruritis was observed in group A than group B and there was a statistically significant difference between both groups (p-value <0.05). Mean incidence of hypotension in group A and group B during the postoperative period was 36% and 42%, which shows hypotension was more in group B, but there was no statistically significant difference between both groups(p-value >0.05).

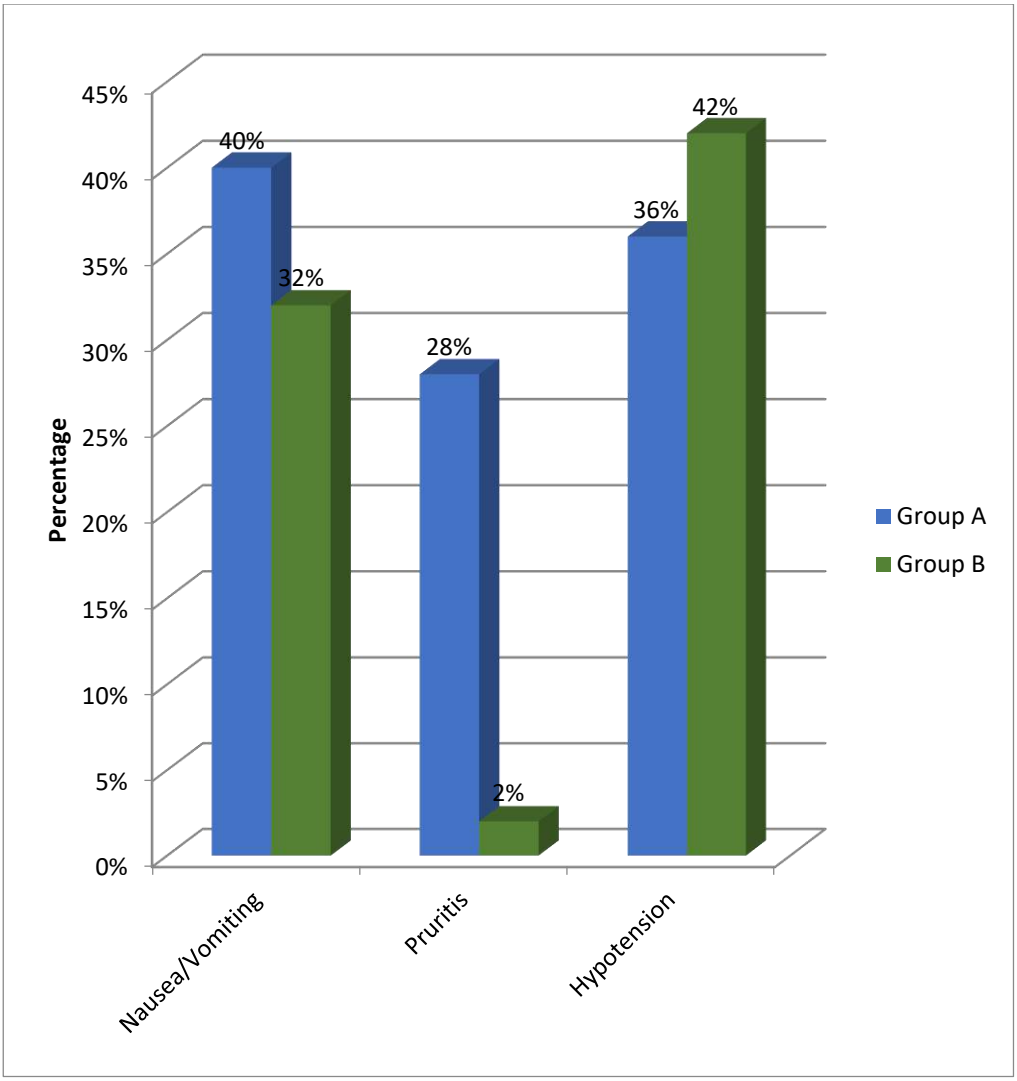


Figure 26- Incidence of side effects: Postoperative period

Table 27

Trends in sedation score: Postoperative

	Group A		Group B		p-value	95% Confidence Interval of the Difference	
Time	Mean	SD	Mean	SD		Lower	Upper
0 minute	1.37	0.49	1.73	0.45	0.000	-0.55	-0.17
15Minute	1.54	0.50	1.83	0.38	0.002	-0.47	-0.11
30Minute	1.54	0.50	1.90	0.37	0.000	-0.53	-0.18
45 Minute	1.44	0.50	2.04	0.46	0.000	-0.79	-0.41
1Hour	1.64	0.53	2.06	0.56	0.000	-0.64	-0.20
1.5 Hour	1.62	0.70	2.15	0.68	0.000	-0.80	-0.25
2 Hour	1.42	0.67	2.13	0.67	0.000	-0.97	-0.44
2.5 Hour	1.58	0.61	1.90	0.69	0.022	-0.58	-0.05
3 Hour	1.60	0.64	1.98	0.76	0.011	-0.66	-0.10
3.5 Hour	1.56	0.58	2.04	0.68	0.000	-0.73	-0.23
4 Hour	1.60	0.61	1.81	0.64	0.098	-0.46	0.04
8 Hour	1.46	0.54	1.75	0.67	0.030	-0.53	-0.05
12 Hour	1.40	0.49	1.71	0.68	0.022	-0.55	-0.07
16 Hour	1.50	0.58	1.67	0.56	0.124	-0.40	0.06
20 Hour	1.50	0.54	1.54	0.54	0.693	-0.26	0.18
24 Hour	1.32	0.47	1.31	0.47	0.937	-0.18	0.20

A statistically significant difference in mean sedation score was observed at different time intervals between groups A and B, higher sedation score was observed in group B at zero minutes, which means just after shifting the patient to the recovery room postoperatively, 15 minutes, 30 minutes, 45 minutes, 1 hour, 1.5 hours, 2 hours, 2.5 hours, 3 hours and 3.5 hours as compared to group A (p-value<0.05).

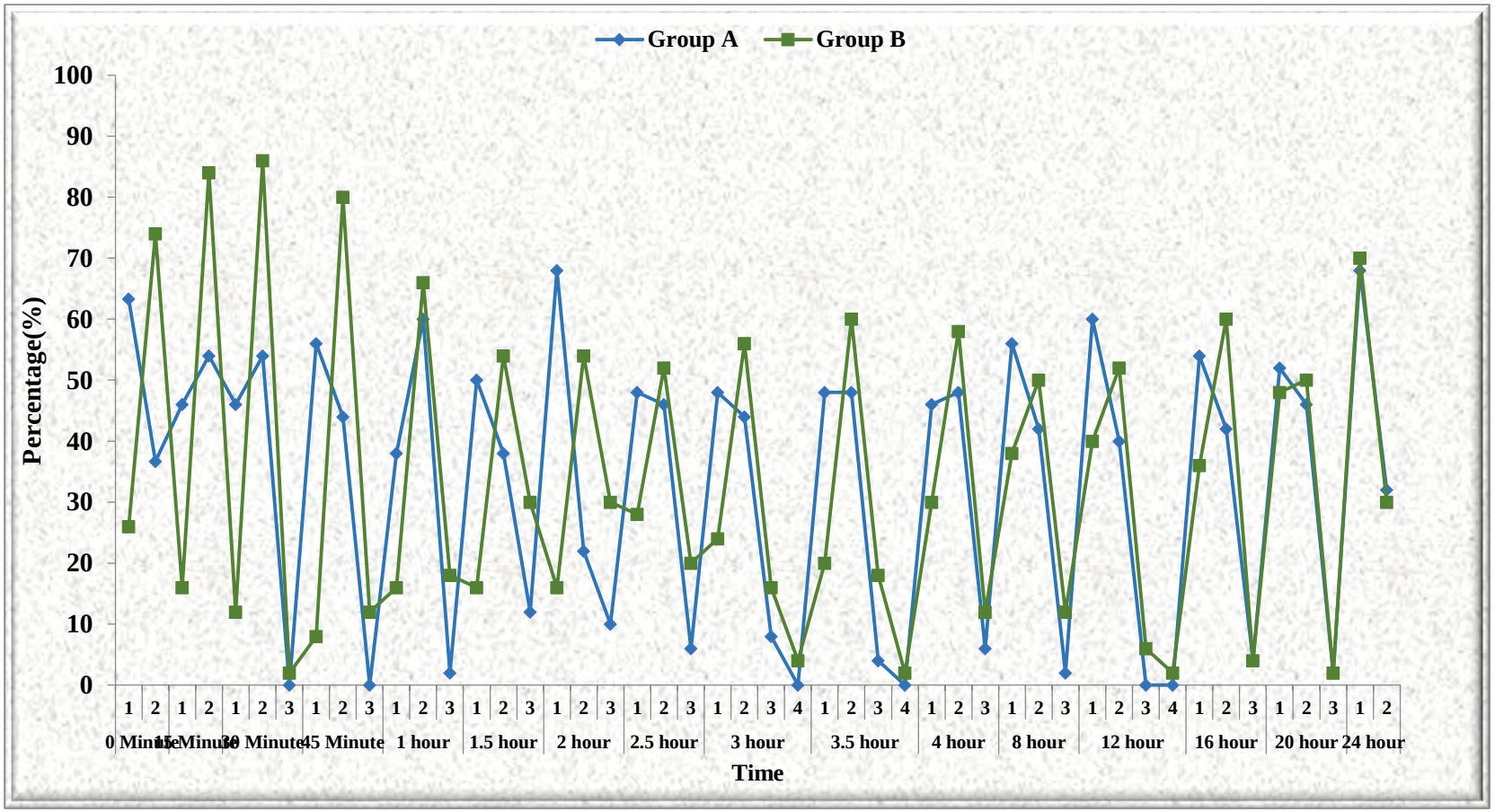


Figure 27- Trends in sedation score: Postoperative

Table 28

Trends in VAS score: postoperative

	Group A		Group B		p-value	95% Confidence Interval of the Difference	
Time (Hour)	Mean	SD	Mean	SD		Lower	Upper
0	0.00	.000[a]	0.00	.000[a]	1.000		
1	0.26	0.60	0.04	0.28	0.009	0.03	0.41
2	1.78	1.78	0.16	0.77	0.000	1.08	2.16
3	2.40	2.00	0.24	0.72	0.000	1.56	2.76
4	2.16	2.18	0.52	0.99	0.000	0.97	2.31
8	2.10	1.84	0.70	0.97	0.000	0.81	1.99
12	2.40	2.01	1.78	1.56	0.152	-0.09	1.33
18	2.04	1.67	1.90	1.54	0.642	-0.50	0.78
24	2.18	1.64	1.92	1.72	0.410	-0.41	0.93

VAS score was more in group A at interval 1 hour, 2 hours, 3 hours, 4 hours and 8 hours as compared to group B. The difference was statistically significant between both groups in terms of VAS score (p-value<0.05).

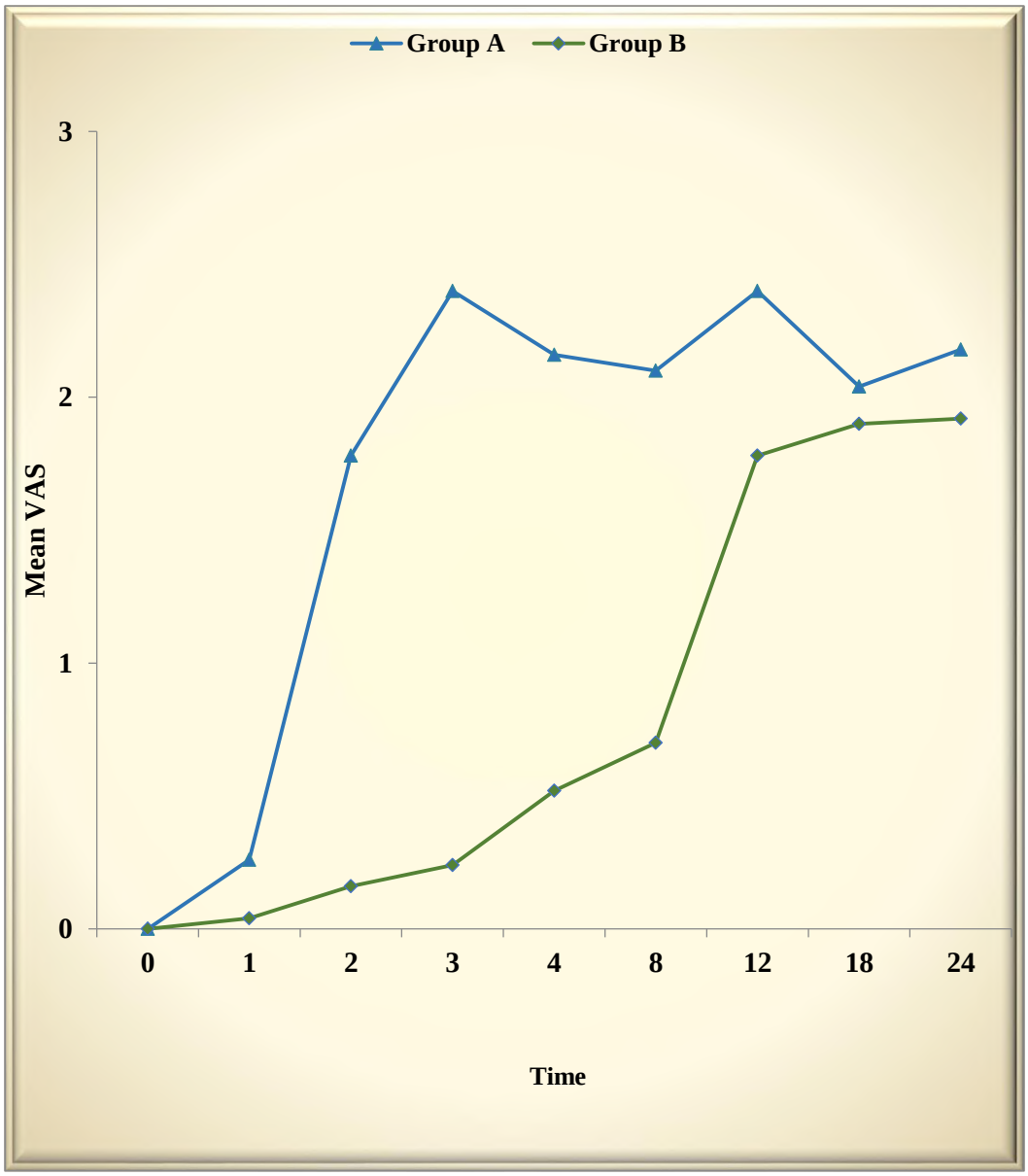


Figure 28- Trends in VAS score: Postoperative

Table 29

Incidence of Rescue analgesic requirement: Postoperative

Time (hrs)	Analgesic Requirement	N	Group A		Group B		χ^2	df	p-value
			F	%	F	%			
0	Present	0	0	0.0	0	0.0	-	-	-
	Absent	100	50	100.0	50	100.0			
1	Present	0	0	0.0	0	0.0	-	-	-
	Absent	100	50	100.0	50	100.0			
2	Present	9	8	10.0	1	2.0	4.396$^{\$}$	1	0.036^{S}
	Absent	91	42	84.0	49	98.0			
3	Present	23	22	44.0	1	2.0	24.901	1	0.000^{S}
	Absent	77	28	56.0	49	98.0			
4	Present	17	15	30.0	2	4.0	11.977	1	0.001^{S}
	Absent	83	35	70.0	48	96.0			
8	Present	17	16	32.00	1	2.0	15.946	1	0.000^{S}
	Absent	83	34	68.0	49	98.0			
12	Present	22	14	28.0	8	16.0	2.098	1	0.148^{NS}
	Absent	78	36	72.0	42	84.0			
18	Present	22	11	22.0	11	22.0	0.000	1	1.000^{NS}
	Absent	78	39	78.0	39	78.0			
24	Present	25	12	24.0	13	26.0	0.053	1	0.817^{NS}
	Absent	75	38	76.0	37	74.0			

Mean rescue analgesic requirement was more in group A at intervals of 2 hours, 3 hours, 4 hours and 8 hours postoperatively. The difference between the two groups in terms of rescue analgesic requirement and consumption was statistically significant (p-value <0.05).

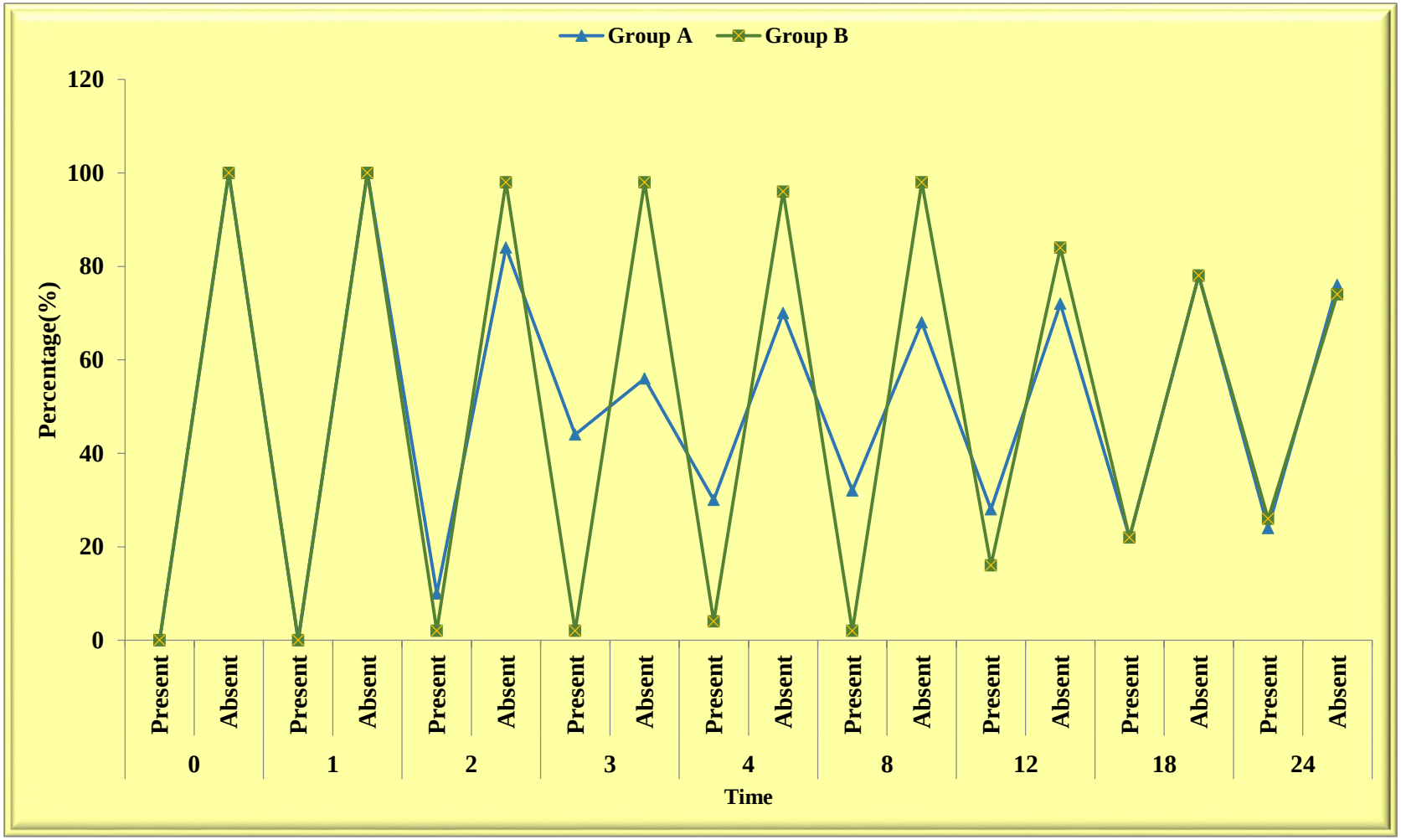


Figure 29- Incidence of Rescue analgesic requirement and consumption: Postoperative

Table 30

Drug Consumption

	Group A		Group B		t	p-value	95% Confidence Interval of the Difference	
	Mean	SD	Mean	SD			Lower	Upper
Drug consumption (mg)	98.00	28.50	37.00	28.23	10.753	0.000	49.742	72.258

Drug Consumption in Group A and Group B was 98±28.50 and 37±28.23 respectively and the difference was statistically significant between both groups (p-value <0.05).

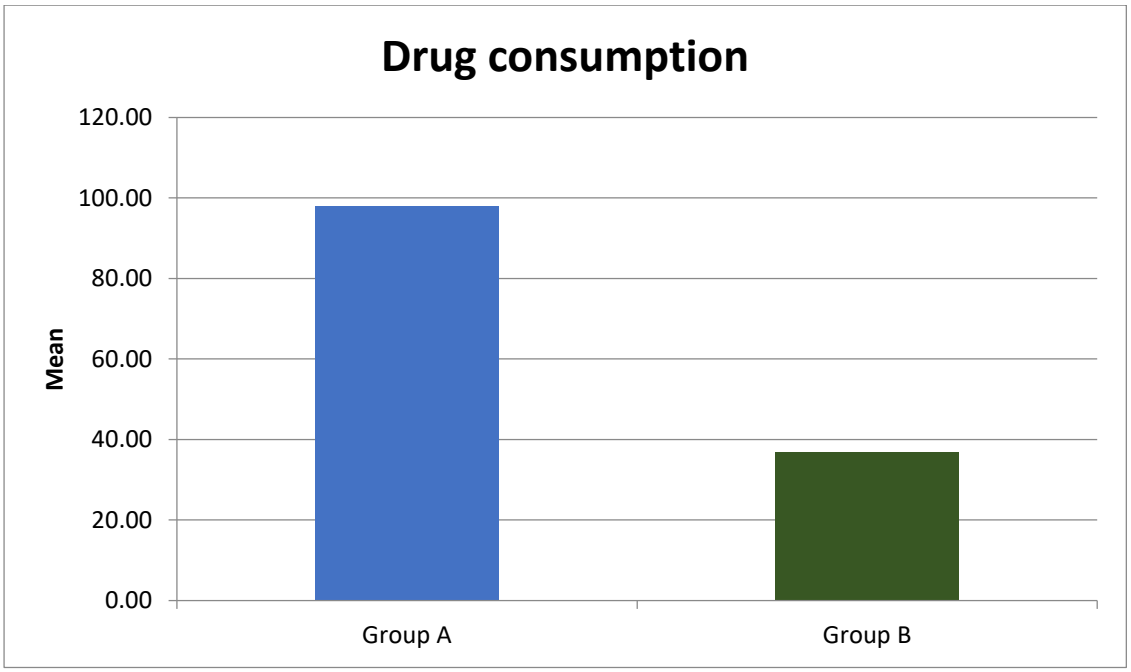


Figure 30- Drug Consumption

DISCUSSION

Spinal anaesthesia is a common technique for lower abdomen, perineum and lower limb surgery. Regional anaesthesia is the choice in elderly patients owing to lower incidence of post-operative delirium and confusion than general anaesthesia [5], but local anaesthetic alone provides the limited duration of sensory and motor blockade. Due to these reasons, adjuvants are used with local anaesthetic agents to prolong the sensory and motor blockade. It reduces the dose of local anaesthetic agents used and hence reduces side effects [51].

Opioids, in conjunction with local anaesthetic agents for spinal anaesthesia are widely used for providing adequate analgesia and prolonged anaesthesia. Fentanyl, a synthetic opioid with central action is the most commonly used adjuvant to bupivacaine in spinal anaesthesia. It is recommended that 25µg of fentanyl gives significant analgesia without respiratory depression in older patients [51]. Fentanyl as an adjuvant also has limitations. It does not stay long in the central neuraxial system because of high lipid solubility and side effects such as nausea, vomiting, pruritus and respiratory depression [9,10].

In literature, many studies have shown that alpha 2 receptor agonist, when administered intrathecally enhances the analgesia provided by local anaesthetic due to synergistic effects. Alpha 2 agonists i.e. clonidine and dexmedetomidine has been used as adjuvant to bupivacaine to prolong post-operative analgesia. Dexmedetomidine is more specific than clonidine and has lesser side effects. Dexmedetomidine has analgesic, sedative, hypnotic, sympatholytic and anxiolytic effects [55-60]. Intrathecal dexmedetomidine prolongs both sensory and motor block and has a nociceptive action for both visceral and somatic pain [60]. An increase in the duration of post-operative analgesia, sensory and motor blockade is dose-dependent but the incidence of bradycardia increases with increase in dose of dexmedetomidine [22,73].

Fentanyl as an adjuvant to local anaesthetic agent in spinal anaesthesia does not stay long in the central neuraxial system and provide limited prolongation of sensory and motor blockade [9]. It is recommended that 25µg of fentanyl as compared to 50µg gives significant analgesia without respiratory depression in older patients [50]. Thus, we hypothesized that using a low dose combination of 10µg dexmedetomidine and 25µg fentanyl would allow us to provide better hemodynamic conditions with minimal side effects and less post-operative analgesia requirements. In our study, we evaluated the efficacy of addition of dexmedetomidine with bupivacaine- fentanyl combination in terms of the onset, duration of sensory and motor block, analgesic efficacy in the form of VAS score, time of the first analgesic request, total analgesic requirement in the 24-hour post-operative period, hemodynamic variations and side effects. One hundred patients posted for endoscopic urology surgeries were included in this study.

In Group A, patients administered spinal anaesthesia using 2ml hyperbaric bupivacaine 0.5% with fentanyl 25µg (0.5ml) and 0.1ml saline.

In Group B, patients were administered 2ml hyperbaric bupivacaine 0.5%with fentanyl 25µg (0.5ml) and dexmedetomidine 10µg (0.1ml).

There was no statistically significant difference in age, gender, height and weight of patients in both groups. There was no statistically significant difference in both groups regarding the type of surgeries and duration of surgery.

Onset of Sensory Block

Time for the onset of sensory block was 5.30±1.56 minutes in group A (Fentanyl) and 4.12±1.45 minutes in group B (Dexmedetomidine + fentanyl). It shows the time for the onset of sensory block was early in group B compared to group A and the difference was statistically significant. These findings are comparable to the study conducted by El Attar A et al., who observed that onset of sensory block was 4.88±0.42 minutes in fentanyl group (25µg) and 4.32±0.28 minutes in dexmedetomidine group (5µg) when used as adjuvant to hyperbaric bupivacaine (15mg). The onset of sensory block was faster in their

study as compared to our study which can be due to the more dose of bupivacaine used in their study i.e. 15mg compared to 10mg used in our study [91].

Similar results seen in a study conducted by Safari F et al. who found that onset of sensory block in fentanyl (25µg) group was 7.9±2.3 minutes and 4.32±1.6 minutes in dexmedetomidine (5µg) group when added as adjuvant to hyperbaric bupivacaine (12.5mg) [92].

A study conducted by Pocham and Naik observed that the onset of sensory block was 3.38±0.83 minutes in fentanyl (25µg) group and 2.62±0.56 minutes in dexmedetomidine (5µg) group when used as an adjuvant to hyperbaric bupivacaine(3ml) in spinal anaesthesia and the difference in the time for the onset of sensory block between both groups was statistically significant. The onset of sensory blockade was earlier in their study as comparison to our study because they used lateral position for spinal anaesthesia compared to sitting position in our study and the dose of dexmedetomidine was 5µg in their study as compare ton 10µg in our study [93].

Megalla SA et.al found that the onset of sensory block was 7.94±1.54 minutes in group F (fentanyl 20µg) as compared to 5.30±1.36minutes of Group fentanyl (25µg) in our study. The onset of sensory block was 7.12±1.59 minutes in group FD (Fentanyl 20µg +Dexmedetomidine 6µg) in their study and 4.12±1.45 minutes in our (Dexmedetomidine+fentanyl) group as an adjuvant to bupivacaine 12.5mg and the difference in the mean time for the onset of sensory block was non-significant between two groups. In our study the mean time for the onset of sensory block was the result of their study was different from our study, which can be explained by the difference in the drug doses [69].

Onset of Motor Block

In our study, the mean onset of the motor blockade in group A (Fentanyl) was 4.30±2.47minutes and in group B (Dexmedetomidine + fentanyl) was 4.60±2.44 minutes. The mean time for onset of motor block was not statistically significant between group A and B (p-value >0.05). The results of our study are similar to the study conducted by

Gupta et al. [22] they found no statistically significant difference in onset of motor block, i.e. Bromage score 3, the onset of motor block in their study was 11.6±1.8 min in group dexmedetomidine (5µg) and 11.2±1.3 min in the fentanyl (25µg) group when used as adjuvant to hyperbaric bupivacaine (12.5mg). The onset of motor block was delayed in their study as compared to our study, which is explained by the difference in definition of onset of motor block i.e. Bromage score 1 in our study.

Mahendru V et al.found that the onset of motor block was 9.0±3.0 minutes in fentanyl (25µg) group and 9.7±3.2 minutes in dexmedetomidine group (5µg) when used as an adjuvant to hyperbaric bupivacaine (12.5mg) and their difference was not statistically significant between the two groups (p-value >0.05) in term of onset of motor block [23].

Highest level of sensory blockade

In our study the highest level of sensory block attained was not statistically significant between the two groups (p value >0.05), T8 level was the highest sensory block which was attained by 82% of participant in group B and 70% of participant in group A. Whereas, T7 was also attained by only 1 person in group A.

These findings are similar to the study conducted by Megalla SA [69], who observed that by adding dexmedetomidine (6µg) plus fentanyl (20µg) as an adjuvant to bupivacaine (12.5mg) for orthopaedic surgeries in spinal anaesthesia developed T8 as the highest sensory level in both the groups.

Highest Grade of Motor Block

Meantime taken to reach the highest level of motor block i.e. Modified Bromage score 3 was 8.2±3.31 minutes in group A (fentanyl) and 10.4±3.00 minutes in group B (Dexmedetomidine +fentanyl) and the difference was statistically significant between two groups in terms of time taken to reach highest motor block (p-value <0.05), It shows that the time taken to reach the highest grade of motor block was prolonged in group B as compared to group A.

The results are comparable to the study conducted by G. Suresh et al. in which the time taken for the highest motor block was 5.41±1.69

minutes in fentanyl (25µg) group and 5.71±1.36 minutes in dexmedetomidine (5µg) group when added as adjuvant to hyperbaric bupivacaine (12.5mg), It shows that the time taken for the highest motor block was slightly prolonged in group dexmedetomidine as compared to group fentanyl. In their study, the time to reach the highest motor block was much faster as compared to our study, which can be explained based on high dose bupivacaine used in their study, i.e.12.5mg as compared to 10mg used in our study [94].

In a study conducted by Megalla SA, the time taken for the highest level of motor block was 10.54±1.58 minutes in group F (fentanyl 20µg) and 9.83±1.46 minutes in the group DF (Dexmedetomidine+fentanyl) and the difference was statistically insignificant between both groups in terms of the highest grade of motor blockade and the results of their study are not consistent with our study which can be explained based on different drug doses i.e. Dexmedetomidine 6µg , fentanyl 20µg, and bupivacaine 12.5mg [69].

Duration of Sensory Block

The duration of sensory block in group A (fentanyl) was 138.60±22.79 and 200.40±21.59 minutes in Group B (Dexmedetomidine+fentanyl). The difference in terms of duration of sensory block was statistically significant between both groups. It shows that the duration of sensory block was significantly prolonged in group B (Dexmedetomidine+fentanyl) as compared to group A (fentanyl).

The results of our study are comparable with the study conducted by Safari F et al.in which the duration of sensory block was 129.3±25.4 minutes in fentanyl group (25µg) and 185.5±27.5 minutes in dexmedetomidine group (5µg) as an adjuvant to hyperbaric bupivacaine (12.5mg), it shows that the duration of sensory block was significantly prolonged in dexmedetomidine group as compared to fentanyl group.

AL Ghanem et al. [20] found that the duration of sensory blockade was 274.8±73.8 minutes in Group D (Bupivacaine10mg+dexmedetomidine 5µg) and 179.5±47.4 minutes in group F (Bupivacaine+fentanyl 25µg).

The difference in terms of duration of sensory blockade was statistically significant between both groups.

The results of our study are comparable with the study conducted by Megalla SA, in which the duration of sensory block was 106.5±24.83 minutes in group F(fentanyl) and 195.41±45.29 minutes in group FD (fentanyl+Dexmedetomidine) and the difference was statistically significant between both groups in terms of duration of sensory blockade. The dose of dexmedetomidine, fentanyl and bupivacaine were 6µg, 20µg and 12.5mg, respectively [69].

The possible mechanism of prolongation of sensory block is by binding to pre-synaptic C fibres and postsynaptic dorsal horn neurons. The analgesic action of the alpha 2 adrenoreceptor is due to depressing the release of nociceptive driven cells and hyperpolarization of postsynaptic dorsal horn neurons [71].

Duration of Motor Blockade

The mean duration of motor block in group A (Fentanyl) and group B (Dexmedetomidine+fentanyl) was 142.90±23.67 and 259.50±23.32 minutes. The difference was statistically significant between both groups in terms of duration of motor block, this shows that the duration of motor block was prolonged in group B (Dexmedetomidine+fentanyl) as compared to group A (fentanyl).

Prolongation of motor block was also observed in a study conducted by EL-Attar A et al, they used 5 µg dexmedetomidine and fentanyl 25 µg as an adjuvant to hyperbaric bupivacaine 10mg. They found the mean duration of motor block was 148.25±12.49 minutes in the fentanyl group and 251.85±39.72 minutes in the dexmedetomidine group [91].

Mahendru V et al. observed that the duration of motor block was 273.3±24.6 minutes in the dexmedetomidine group and 196±26.8 minutes in the fentanyl group. The difference was statistically significant between both groups in terms of duration of motor block (p-value <0.05), which shows that the duration of motor block was significantly prolonged in the dexmedetomidine group as compared to the fentanyl group. Doses of drugs used in their study were 5µg

dexmedetomidine, 25µg fentanyl and 12.5mg hyperbaric bupivacaine [23].

The results of our study are comparable with the study conducted by Megalla SA, in which the duration of motor block was 107.7±32.16 minutes in group fentanyl (20µg) and 173.33±41.14 minutes in group FD (Fentanyl 20µg+Dexmedetomidine 6µg) and the difference was statistically significant between both groups [69].

Haemodynamic Profile: Hemodynamic parameters studied included heart rate, non-invasive systolic and diastolic blood pressure, respiratory rate and oxygen saturation both intraoperative and post-operative period.

Heart rate and mean blood pressure: There was no statistically significant difference observed in heart rate and mean arterial pressure at any interval of time during the intraoperative and post-operative period in both groups. During the intraoperative period, 52% of patients from both group A and group B developed hypotension. During the post-operative period, 36% of patients from group A and 42% of patients from group B developed hypotension, but the difference was not statistically significant (p-value >0.05).

The results of our study are comparable to the study conducted by Megalla SA, they concluded that 2% of patients from both Group FD i.e. dexmedetomidine (6µg) +fentanyl (20µg) and group F (fentanyl 20µg), had hypotension and the difference was statistically insignificant between both groups in terms of hypotension [69].

The results of our study are comparable with the study conducted by Mahendru V et al. They also observed that the mean values of arterial blood pressure and heart rate were comparable and the difference was not statistically significant between group dexmedetomidine (5µg) and fentanyl (25µg) during an intraoperative and post-operative period at any time interval [23].

Respiratory rate and oxygen saturation: Our study demonstrated that none of the patients from either group had any significant change in respiratory rate during the intraoperative and post-operative periodat any time interval. The difference was not statistically significant

between both groups in terms of oxygen saturation during the intraoperative and post-operative period.

These results are similar to the study conducted by Mahendru V et al.. They used fentanyl 25µg and dexmedetomidine 5µg as an adjuvant to hyperbaric bupivacaine (12.5mg) intrathecally and found no statistically significant difference between both groups in terms of oxygen saturation and respiratory rate [23].

Adequacy of post-operative analgesia and post-operative analgesic requirement in first 24 hours: Group A (fentanyl) had a higher mean VAS score at 1 hour, 2 hours, 3 hours, 4 hours and 8 hours postoperatively as compared to group B (Dexmedetomidine+ fentanyl) with a statistically significant difference. Hence, we infer that intrathecal dexmedetomidine in dose 10µg prolonged the analgesic effect, evidenced by decreased VAS score in group B (dexmedetomidine +fentanyl) as compared to group A (fentanyl).

The results of our study are similar to the study conducted by Mahendru V et al. they observed post-operative VAS score and total analgesic requirement in 24 hours was minimal in group dexmedetomidine (5µg) as compared to the fentanyl (25µg) group [23].

Pocham and naik observed in their study that the VAS score was highly significant during 24 hours of the study. Most of the patients in the dexmedetomidine group had VAS <3.5±0.51 before 12 hours compared to the 5.9±0.97 VAS score in the fentanyl group. Drugs used were dexmedetomidine 5µg and fentanyl 25µg as an adjuvant to 15mg bupivacaine [93].

We evaluated the effect of analgesia by the cumulative post-operative 24-hour tramadol and diclofenac consumption among both groups. The total mean analgesic consumption was 98±28.50mg tramadol in group A (fentanyl) and 37±28.23 mg in group B (dexmedetomidine-fentanyl). Drug consumption was more in group A as compared to group B and the difference was statistically significant.

The results of our study are similar to the study conducted by El-Attar et al. they observed that the total analgesic requirement in 24hours was minimal in group dexmedetomidine (5µg) as compared to fentanyl

(25µg) group when used as adjuvant to hyperbaric bupivacaine (15mg) [91]. Similarly, significantly improved analgesic efficacy was reported by Gupta et al. in group dexmedetomidine (5µg) as compared to fentanyl (25µg) group when used as an adjuvant to hyperbaric bupivacaine (12.5mg) [22].

In a study conducted by Megalla SA, Mean time for first analgesic request in Group FD (dexmedetomidine+fentanyl) was 522.79±59.0 compared to 207.37±20.19 minutes in Fentanyl group [69].

The analgesic effect of dexmedetomidine is due to the alpha 2A receptor's stimulation in the dorsal horn. It suppresses pain transmission by decreasing the release of pronociceptive transmitters, substance P and glutamate. It reduces the hyperpolarization of interneurons [87].

Intraoperative and Post-Operative Side Effects

1. **Nausea and vomiting:** Incidence of nausea and vomiting was comparable between both groups and there was no statistically significant difference between group A and B.
2. **Pruritis:** In group A (fentanyl) 78% of patients had pruritus during the intraoperative period and 28% during the post-operative period. In group B (Dexmedetomidine+fentanyl),the incidence of pruritus was 42% during the intraoperative period and 2% during the post-operative period. The results of our study are comparable with the study conducted byMahendru V et al. they observed pruritus in 13.3% of the patients in the fentanyl group and none of the patient in the dexmedetomidine group had pruritus, the dose of drugs used in their study was 5µg dexmedetomidine, 25µg fentanyl and 12.5 mg hyperbaric bupivacaine [23].

   Megalla SA et al. also found that the fentanyl group had more pruritis, which was 3% in the fentanyl group as compared to no case of pruritus in dexmedetomidine (6µg) + fentanyl combination (20µg) group when used as an adjuvant to hyperbaric bupivacaine (12.5mg) [69].
3. **Sedation:** Patients in group B (Dexmedetomidine+fentanyl) has more sedation score at 0 minutes, 15 minutes, 30 minutes, 45

minutes,1 hour, 1.5 hours, 2 hours, 2.5 hours, 3 hours and 3.5 hours as compared to group A (fentanyl) with a statistically significant difference between two groups (p-value <0.05).

In a study conducted by Pocham and Naik, they found that at first 1 hour and 1 and half hours, there was an increased grade of mean sedation score of 3.40±0.49 in group dexmedetomidine and 2.16±0.37 in the fentanyl group [93].

In a study conducted by Megalla S.A, they observed that 72% of patients in group FD (fentanyl+dexmedetomidine) had sedation score of 2 and 28% had sedation score 1, whereas, in group fentanyl, 8% of patients had sedation score 2 and 92% had a score of 1 with a statistically significant difference between two groups, dose of drugs used in their study were 6µg dexmedetomidine, fentanyl 20 µg hyperbaric bupivacaine 12.5 mg [69].

4. **Hypotension:** During the intraoperative period, 52%of patients from both group A and group B developed hypotension. During the post-operative period, 36% of patients from group A and 42%of patients from group B developed hypotension, but the difference was not statistically significant (p-value >0.05).

The results of our study are comparable to the study conducted by Megalla SA, and they concluded that 2% of patients from both Group FD i.e. Dexmedetomidine (6µg) +fentanyl (20µg) and group F (fentanyl 20µg) had hypotension and the difference was statistically insignificant between both groups in terms of hypotension [69].

SUMMARY AND CONCLUSIONS

This study was conducted in the department of Anaesthesiology, Dayanand Medical College and Hospital, Ludhiana, after approval from Institutional Ethical committee. Written informed consent was obtained from all the patients who participated in this study. A total of 100 patients of either sex belonging to ASA Grade I and II, scheduled to undergo endoscopic urology surgery under the subarachnoid block, were studied.

After informed consent and a thorough pre anaesthetic check-up, Patients were randomly divided into two groups of 50 patients each.

The treatment groups were:

Group A: Intrathecal Hyperbaric Bupivacaine 10mg + Fentanyl 25µg + saline 0.1ml.

Group B: Intrathecal Hyperbaric Bupivacaine 10mg + Fentanyl 25µg + Dexmedetomidine 10µg

Patients in both groups were comparable with regards to age, height, weight, sex and ASA physical status. The mean onset of sensory block was early in group B (dexmedetomidine +fentanyl) i.e. 4.12 ± 1.45 minutes as compared to 5.30 ± 1.56 minutes in group A (fentanyl). The difference in the mean time for onset of the motor block between the two groups was statistically insignificant. The highest level of sensory block was T8 in both the groups. Duration of Sensory and motor block was significantly prolonged in group B (dexmedetomidine+fentanyl) compared to group A (fentanyl). The difference was not statistically significant between the two groups in terms of heart rate, mean arterial blood pressure, respiratory rate and oxygen saturation. Sedation score was significantly more in group B (dexmedetomidine+fentanyl) as compared to group A (fentanyl). VAS score was significantly more in group A (fentanyl) as compared to group B (dexmedetomidine+fentanyl).Side effects like hypotension was observed more in group B (dexmedetomidine+fentanyl) as compared to group A (fentanyl), but the difference was statistically insignificant. Incidence of pruritus was significantly more in group A (fentanyl) as

compared to group B (dexmedetomidine+fentanyl).Incidence of nausea and vomiting was comparable between both groups and there was no statistically significant difference between both groups.

Hence, our study validates the use of intrathecal Dexmedetomidine 10µg with bupivacaine 10mg + fenatnyl 25µg combination in endoscopic urology surgery because:

1. Time of onset of sensory block was significantly rapid.
2. The duration of sensory and motor blockade was also significantly prolonged.
3. Hemodynamic stability was maintained.
4. Provides prolonged post operative analgesia.
5. Less incidence of side effects.

To conclude, the addition of intrathecal dexmedetomidine to bupivacaine - fentanyl combination provides early onset of sensory blockade, prolonged duration of sensory and motor blockade. It prolongs the post-operative analgesia with decreased postoperative analgesic requirement, with improved hemodynamic stability without increasing the incidence of side effects as compared to bupivacaine-fentanyl combination.

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S.NO	CR NO.	Group	Initials	AGE	SEX	WEIGHT(Kg)	Preoperative_HR(beats/min)	SBP (mmHg)	DBP (mmHg)	MAP(mmHg)	RR(/min)	DOS (min) Duration	Highest Level (HLSB)	TOMB (min)	TOSB (min)	DOSB (min)	DOMB (min)	SL_0 MIN	SL_5 MIN	SL_10 MIN	SL_15 MIN	SL_20MIN	SL_25MIN	SL_30MIN	SL_45MIN	SL_60MIN	SL_75MIN	MB_0 MIN	MB_5 MIN	MB_10 MIN	MB_15 MIN	MB_20 MIN
1	661758	A	Ns	80	Male	52	62	110	70	63	63	25	T8	10	5	120	135	T12	T8	T8	T8	T8	-	-	-	-	-	0	0	2	3	3
2	48758	B	SS	72	Male	97	78	140	70	93	16	60	T8	5	10	180	255	L3	T11	T8	T8	T8	T8	T8	-	-	-	2	2	3	3	3
3	844906	B	AK	63	Male	77	87	120	76	69	18	50	T8	5	10	240	285	L3	T12	T8	T8	T8	T8	-	-	-	-	0	1	2	3	3
4	846953	B	VS	38	Female	82	90	130	80	77	16	30	T8	5	10	240	255	L3	T12	T10	T8	T8	T8	T8	-	-	-	2	2	3	3	3
5	817728	A	SM	69	Male	70	80	140	90	80	16	60	T8	5	5	150	165	T12	T8	T8	T8	T8	T8	T8	T8	T8	-	0	3	3	3	3
6	796589	B	PS	80	Male	80	86	130	90	70	16	40	T8	5	10	210	270	L2	T12	T8	T8	T8	T8	T8	T8	-	-	0	2	2	3	3
7	743419	A	RD	44	Male	69	78	130	70	70	18	60	T8	5	5	120	105	T12	T8	T8	T8	T8	T8	T9	-	-	-	2	3	3	3	3
8	182164	A	BK	58	Male	74	74	132	96	68	15	60	T9	5	5	120	105	L1	T9	T9	T9	T9	T9	T9	-	-	-	0	2	3	3	3
9	687038	A	GS	68	Male	75	80	126	70	79	20	60	T8	5	10	105	120	L1	T12	T8	T8	T8	T8	T8	-	-	-	0	3	3	3	3
10	842927	A	HS	77	Male	62	80	190	88	131	16	30	T9	0	5	135	135	T11	T9	T9	T9	T9	T9	T9	-	-	-	2	2	3	3	3
11	785031	B	GS	70	Male	80	86	140	80	87	18	40	T8	0	5	195	255	T11	T8	T8	T8	T8	T8	T8	T8	-	-	2	2	3	3	3
12	684401	B	As	59	Male	70	70	148	72	100	19	15	T8	5	10	195	240	L3	T9	T8	T8	-	-	-	-	-	-	0	1	2	3	-
13	745061	A	VM	23	Male	68	78	130	70	83	18	40	T8	5	5	135	120	T12	T8	T8	T8	T8	T8	-	-	-	-	0	3	3	3	3
14	870796	B	MS	70	Male	58	66	140	80	87	16	40	T9	5	5	225	285	T12	T9	T9	T9	T9	T9	T9	T9	-	-	0	2	3	3	3
15	593279	B	JN	67	Male	67	70	120	92	59	17	30	T8	5	10	195	270	T10	T9	T8	T8	T8	T8	T8	-	-	-	0	1	2	3	3
16	838682	A	SS	80	Male	65	84	138	90	78	15	40	T8	5	5	165	165	T12	T10	T8	T8	T8	T8	T8	T8	-	-	0	3	3	3	3
17	826769	B	KK	60	Male	93	80	130	90	70	14	25	T8	5	10	195	270	L3	T11	T8	T8	T8	T8	-	-	-	-	0	2	3	3	3
18	844610	B	FS	57	Male	80	60	120	80	67	16	60	T9	10	5	210	270	T12	T9	T9	T9	T9	T9	T9	T9	T9	-	0	0	2	3	3
19	631715	B	RG	45	Male	76	88	140	70	93	14	30	T8	5	5	210	270	T11	T8	T8	T8	T8	T8	T8	-	-	-	0	2	3	3	3
20	838678	A	SS	53	Male	86	80	124	86	67	14	40	T8	5	5	180	210	T12	T8	T8	T8	T8	T8	T8	T8	-	-	0	3	3	3	3
21	853850	A	JS	45	Male	57	90	146	90	86	18	30	T9	5	5	135	120	T11	T9	T9	T9	T9	T9	T9	-	-	-	0	3	3	3	3
22	60847	A	PK	61	Male	68	82	140	90	80	14	50	T8	5	5	165	165	T12	T8	T8	T8	T8	T8	-	-	-	-	0	3	3	3	3
23	788260	A	SD	65	Female	56	72	130	90	70	18	30	T8	5	5	150	180	T11	T9	T8	T8	T8	-	-	-	-	-	0	2	2	3	3
24	779908	B	HS	46	Male	70	72	130	90	70	14	40	T8	5	5	210	270	T12	T9	T8	T8	T8	T8	-	-	-	-	0	2	2	3	3
25	853365	A	KK	43	Female	48	75	130	90	70	16	30	T8	5	10	150	135	T12	T11	T10	T8	T8	T8	T8	-	-	-	0	2	2	3	3
26	77059	A	BR	68	Male	80	80	140	90	80	18	50	T9	5	5	165	180	L1	T9	T9	T9	T9	T9	-	-	-	-	0	2	3	3	3
27	838113	B	RS	62	Male	80	78	120	70	73	16	30	T9	5	5	135	165	T11	T9	T9	T9	T9	-	-	-	-	-	0	2	3	3	3
28	745767	A	JR	62	Male	75	76	130	90	70	18	40	T8	5	5	135	135	T12	T8	T8	T8	T8	T8	-	-	-	-	0	2	3	3	3
29	801392	B	S	37	Female	60	88	140	90	80	16	30	T8	5	10	225	255	L1	T12	T8	T8	T8	-	-	-	-	-	0	3	3	3	3
30	154040	A	SS	32	Female	68	82	130	90	70	16	30	T8	5	5	150	150	T12	T8	T8	T8	T8	-	-	-	-	-	0	2	3	3	3
31	115021	B	JS	78	Male	77	72	150	90	90	16	50	T8	5	5	210	255	T11	T8	T8	T8	T8	T8	-	-	-	-	0	2	3	3	3
32	778239	A	BD	75	Male	74	80	110	70	63	16	30	T8	10	5	120	150	L3	T12	T10	T8	T8	-	-	-	-	-	0	2	3	3	3
33	181376	A	CS	56	Male	80	82	150	90	90	17	30	T8	5	5	195	180	T12	T9	T8	T8	T8	-	-	-	-	-	0	2	3	3	3
34	778277	B	N	25	Female	75	86	138	72	90	14	40	T8	5	5	180	240	T12	T9	T8	T8	T8	T8	-	-	-	-	0	2	3	3	3
35	774374	A	JL	75	Male	78	86	142	90	82	16	20	T8	5	5	150	165	L3	T10	T8	T8	-	-	-	-	-	-	0	2	3	3	-
36	742441	B	DK	25	Male	80	88	120	76	69	16	30	T8	5	5	180	240	T12	T10	T8	T8	T8	-	-	-	-	-	0	2	3	3	3
37	793187	B	GS	17	Male	62	86	138	82	83	18	25	T8	5	5	195	240	T12	T8	T8	T8	T8	T8	-	-	-	-	0	3	3	3	3
38	788656	A	SS	77	Male	75	80	136	78	83	14	30	T8	5	5	165	165	T12	T8	T8	T8	T8	T8	T8	-	-	-	0	2	3	3	3
39	642695	A	SK	48	Female	68	80	140	90	80	16	25	T8	5	10	120	120	L1	T9	T8	T8	T8	T8	-	-	-	-	0	3	3	3	3
40	741453	B	AS	23	Female	70	76	138	72	90	16	20	T8	5	5	210	270	T12	T8	T8	T8	-	-	-	-	-	-	0	2	3	3	-
41	54522	B	JK	46	Female	78	98	148	88	89	16	30	T8	5	10	195	240	L1	T12	T8	T8	T8	-	-	-	-	-	0	2	3	3	3
42	761709	B	RK	19	Female	50	82	128	74	79	18	40	T8	5	5	225	255	T11	T9	T8	T8	T8	T8	-	-	-	-	0	2	3	3	3
43	705041	B	MI	70	Female	99	98	140	96	76	16	40	T8	5	5	180	210	L1	T10	T8	T8	T8	T8	-	-	-	-	0	3	3	3	3
44	717748	B	HS	22	Female	60	74	124	70	77	16	30	T8	10	5	195	255	L1	T8	T8	T8	T8	T8	-	-	-	-	0	0	3	3	3
45	501243	A	RK	31	Female	80	82	126	72	78	16	25	T8	5	5	165	165	T11	T8	T8	T8	T8	T8	-	-	-	-	0	2	3	3	3
46	223089	B	GC	47	Female	52	74	140	90	80	20	30	T8	0	5	180	270	L4	T10	T9	T8	T8	-	-	-	-	-	1	2	3	3	3
47	681994	B	PK	66	Female	73	70	172	98	106	20	60	T8	5	10	180	225	T11	T9	T8	T8	T8	T8	T8	-	-	-	0	1	3	3	3
48	848229	A	OP	69	Female	69	78	132	76	81	18	15	T7	5	5	150	150	T12	T7	T7	T7	-	-	-	-	-	-	0	3	3	3	-
49	833309	B	FS	76	Female	76	88	138	72	90	18	50	T8	5	5	195	240	L1	T9	T8	T8	T8	T8	T8	T8	-	-	0	2	3	3	3
50	676482	A	JS	44	Female	80	92	130	90	70	16	25	T8	5	0	105	150	T12	T9	T9	T9	T8	T8	-	-	-	-	2	2	3	3	3
51	802226	A	SS	61	Female	60	76	138	92	77	15	60	T8	0	5	180	195	L3	T12	T8	T8	T8	T8	T8	-	-	-	2	3	3	3	3
52	748299	A	SD	64	Female	74	98	160	100	93	18	30	T8	5	10	135	165	L1	T11	T8	T8	T8	T8	T8	-	-	-	0	2	3	3	3
53	734902	A	SS	61	Male	69	98	120	80	67	18	30	T8	5	5	135	150	T11	T8	T8	T8	T8	T8	T8	-	-	-	0	3	3	3	3
54	700569	A	BS	68	Male	73	94	140	88	81	16	40	T8	5	5	180	165	T12	T8	T8	T8	T8	T8	-	-	-	-	0	3	3	3	3
55	837587	B	AM	52	Male	89	82	140	98	75	16	40	T8	5	5	180	225	T11	T10	T8	T8	T8	T8	-	-	-	-	0	2	3	3	3
56	722110	A	ML	63	Male	58	72	120	82	65	18	40	T9	5	5	150	120	T11	T9	T9	T8	T8	T8	-	-	-	-	0	2	3	3	3
57	114546	A	MJ	53	Male	78	96	146	90	86	16	30	T8	5	5	150	150	L1	T8	T8	T8	T8	-	-	-	-	-	0	2	3	3	3
58	788170	B	US	31	Male	70	72	120	70	73	16	15	T8	10	10	210	255	L1	T12	T8	T8	-	-	-	-	-	-	0	0	2	3	-
59	686615	B	MR	72	Male	80	88	130	70	83	20	60	T9	5	5	210	270	T11	T9	T9	T9	T9	T9	T9	T9	T9	-	0	2	3	3	3
60	686026	B	JS	47	Male	75	84	140	90	80	20	60	T8	5	5	180	285	L5	T10	T10	T8	T8	T8	T8	T8	T8	-	0	2	2	3	3
61	116380	B	PS	45	Male	85	88	120	76	69	20	40	T8	0	5	195	270	L4	T10	T8	T8	T8	T8	-	-	-	-	1	2	3	3	3
62	795478	A	BC	50	Male	60	62	138	90	78	18	20	T8	5	5	150	120	T12	T10	T8	T8	T8	-	-	-	-	-	0	3	3	3	3
63	480567	B	RK	59	Male	67	78	120	70	73	16	30	T8	5	10	210	255	L3	T12	T8	T8	T8	-	-	-	-	-	0	2	3	3	3
64	688371	A	RS	78	Male	78	88	120	76	69	18	40	T8	0	5	105	135	L1	T9	T8	T8	T8	T8	T8	T8	-	-	2	3	3	3	3
65	5111	A	SD	57	Female	64	77	134	72	86	16	30	T9	0	5	105	135	T11	T9	T9	T9	T9	T9	T9	-	-	-	2	3	3	3	3
66	26745	B	ML	81	Male	54	80	130	70	83	16	30	T8	5	5	225	255	T10	T8	T8	T8	T8	-	-	-	-	-	0	2	3	3	3
67	770596	A	S	31	Female	68	82	128	80	75	15	25	T8	5	5	120	135	T12	T8	T8	T8	T8	T8	-	-	-	-	0	3	3	3	3
68	991109	B	AD	52	Male	75	90	128	88	69	16	25	T8	5	0	225	285	T10	T8	T8	T8	T8	-	-	-	-	-	0	2	2	3	3
69	709433	A	BS	32	Male	76	88	140	98	75	18	30	T9	0	5	135	150	L1	T10	T10	T9	T9	T8	T8	-	-	-	1	2	3	3	3
70	461418	A	SS	66	Male	80	84	130	96	66	16	25	T8	5	5	165	150	L1	T9	T8	T8	T8	T8	-	-	-	-	0	2	3	3	3
71	808033	A	TI	47	Male	84	89	138	90	90	16	25	T9	5	5	120	150	L1	T9	T9	T9	T9	T9	-	-	-	-	0	3	3	3	3
72	619198	A	VM	33	Male	75	75	136	70	89	17	30	T8	0	5	120	135	T11	T9	T8	T8	T8	T8	T8	-	-	-	2	2	3	3	3
73	599244	A	Ak	49	Male	68	82	120	76	69	15	40	T8	5	5	105	135	T9	T9	T8	T8	T8	T8	T8	T8	-	-	0	2	3	3	3
74	683702	B	SS	80	Male	65	80	140	90	80	20	30	T8	5	5	180	240	T12	T10	T8	T8	T8	-	-	-	-	-	0	2	2	3	3
75	794620	A	Sk	65	Male	67	96	150	90	90	18	25	T8	0	5	105	150	T11	T9	T8	T8	T8	T8	-	-	-	-	2	2	3	3	3
76	856682	B	MS	66	Male	66	94	148	98	83	16	30	T8	5	10	225	285	L1	T12	T9	T8	T8	-	-	-	-	-	0	2	3	3	3
77	795995	B	KR	73	Male	75	70	130	80	77	18	30	T8	5	5	210	285	T12	T9	T8	T8	T8	-	-	-	-	-	0	2	3	3	3
78	844810	B	JS	59	Male	80	64	130	80	77	18	50	T8	5	5	210	270	L1	T10	T8	T8	T8	T8	T8	T8	-	-	0	2	2	3	3
79	788845	A	Bk	55	Female	58	80	110	80	57	16	40	T8	10	5	120	165	L1	T8	T8	T8	T8	T8	T8	T8	-	-	0	2	3	3	3
80	709652	B	BM	72	Male	70	82	140	92	79	16	30	T9	10	2	240	255	L1	T12	T9	T9	T8	T8	T8	-	-	-	0	2	3	3	3
81	647701	A	DS	59	Male	80	76	128	80	67	16	25	T9	5	5	105	120	L1	T9	T9	T9	T9	T9	-	-	-	-	0	3	3	3	3

S.NO	CR NO.	MB_25MIN	MB_30MIN	MB_45MIN	MB_60MIN	MB_75MIN	HR_0 min	HR_5 min	HR_10 min	HR_15 min	HR_20 min	HR_25 min	HR_30 min	HR_40 min	HR_50 min	HR_60 min	HR_70 min	SBP_0 min	SBP_5 min	SBP_10 min	SBP_15 min	SBP_20 min	SBP_25 min	SBP_30 min	SBP_40 min	SBP_50 min	SBP_60 min	SBP_70 min	DBP_0 min	DBP_5 min	DBP_10 min
1	661758	-	-	-	-	-	62	60	61	59	58	60	-	-	-	-	-	110	112	100	98	88	108	-	-	-	-	-	70	72	60
2	48758	3	3	-	-	-	80	81	82	78	79	76	76	76	79	78	-	140	138	120	126	120	118	126	120	128	120	-	70	72	70
3	844906	3	-	-	-	-	90	90	88	89	86	84	85	84	86	-	-	130	128	118	120	110	118	120	128	124	-	-	80	74	70
4	846953	3	3	-	-	-	90	90	89	86	85	83	84	-	-	-	-	130	128	120	118	116	118	120	-	-	-	-	80	76	74
5	817728	3	3	3	3	-	80	79	78	76	74	70	72	71	70	70	-	140	138	130	128	118	120	110	112	120	110	-	90	90	90
6	796589	3	3	3	-	-	76	74	69	72	70	71	72	70	-	-	-	130	128	120	118	118	120	110	100	-	-	-	90	88	80
7	743419	3	3	-	-	-	70	68	65	64	70	72	70	72	74	70	-	130	128	120	118	124	128	128	118	124	120	-	80	76	74
8	182164	3	3	-	-	-	74	70	69	68	68	67	68	67	65	66	-	132	120	118	116	118	120	118	120	120	118	-	96	75	65
9	687038	3	3	-	-	-	80	74	68	63	65	66	68	62	60	61	-	120	100	102	88	118	124	126	120	124	120	-	70	60	64
10	842927	3	3	-	-	-	81	80	79	78	77	76	77	-	-	-	-	190	180	160	162	150	148	130	-	-	-	-	88	72	78
11	785031	3	3	3	-	-	86	84	83	82	80	81	80	81	-	-	-	140	130	128	120	118	116	120	118	-	-	-	87	78	76
12	684401	-	-	-	-	-	70	68	71	66	-	-	-	-	-	-	-	148	148	148	164	-	-	-	-	-	-	-	76	75	78
13	745061	3	-	-	-	-	80	78	79	80	78	77	76	75	-	-	-	120	114	118	90	118	112	122	120	-	-	-	72	70	66
14	870796	3	3	3	-	-	66	64	62	60	61	58	59	60	-	-	-	140	124	120	118	88	100	110	120	-	-	-	80	74	80
15	593279	3	3	-	-	-	70	69	68	67	66	68	67	-	-	-	-	120	118	120	118	110	112	118	-	-	-	-	92	78	82
16	838682	3	3	3	-	-	84	82	81	80	78	79	77	76	-	-	-	138	130	128	120	118	100	120	128	-	-	-	90	90	88
17	826769	3	-	-	-	-	80	80	82	79	79	78	-	-	-	-	-	150	140	134	120	122	120	-	-	-	-	-	90	90	86
18	844610	3	3	3	3	-	67	66	65	64	63	62	60	61	62	62	-	120	118	118	114	112	120	120	120	118	112	-	80	72	66
19	631715	3	3	-	-	-	84	83	82	84	80	81	80	-	-	-	-	140	138	130	128	120	124	118	-	-	-	-	80	78	80
20	838678	3	3	3	-	-	80	81	82	83	84	82	80	79	-	-	-	124	120	118	116	118	110	120	120	-	-	-	86	80	78
21	853850	3	3	-	-	-	98	96	96	94	92	90	92	-	-	-	-	146	130	124	120	118	110	112	-	-	-	-	90	80	72
22	60847	3	3	-	-	-	82	81	80	79	78	76	77	76	75	-	-	140	134	138	120	118	110	112	110	128	-	-	90	88	80
23	788260	3	-	-	-	-	76	72	74	72	70	70	68	-	-	-	-	130	128	128	120	118	120	124	-	-	-	-	90	88	84
24	779908	3	-	-	-	-	72	70	69	68	66	64	62	62	-	-	-	130	128	120	120	110	108	120	122	-	-	-	90	82	78
25	853365	-	-	-	-	-	78	77	74	76	72	70	71	-	-	-	-	130	130	128	110	108	120	122	-	-	-	-	90	88	82
26	77059	3	3	-	-	-	80	82	81	78	79	76	77	74	76	-	-	140	130	136	124	120	118	110	112	110	-	-	90	80	78
27	838113	-	-	-	-	-	76	74	73	70	69	68	68	-	-	-	-	120	118	124	110	100	90	110	-	-	-	-	70	64	74
28	745767	3	-	-	-	-	78	80	81	79	80	82	80	78	-	-	-	120	118	110	100	120	122	124	128	-	-	-	76	74	70
29	801392	-	-	-	-	-	88	86	87	85	84	82	82	-	-	-	-	140	132	130	128	120	120	118	-	-	-	-	90	96	90
30	154040	-	-	-	-	-	82	83	81	80	79	80	82	-	-	-	-	148	138	132	130	128	120	122	-	-	-	-	90	90	88
31	115021	3	-	-	-	-	60	59	58	56	59	57	56	54	55	-	-	150	148	140	138	138	120	148	130	120	-	-	90	90	82
32	778239	-	-	-	-	-	80	78	76	82	80	79	78	-	-	-	-	120	118	118	114	120	118	110	-	-	-	-	70	72	66
33	181376	-	-	-	-	-	82	84	83	80	81	79	77	-	-	-	-	150	148	136	134	128	124	120	-	-	-	-	90	88	84
34	778277	3	-	-	-	-	86	84	83	82	80	78	77	76	-	-	-	130	128	122	120	118	120	116	112	-	-	-	72	74	70
35	774374	-	-	-	-	-	88	89	90	84	82	-	-	-	-	-	-	142	140	138	130	120	-	-	-	-	-	-	90	80	78
36	742441	-	-	-	-	-	80	82	80	80	78	79	74	-	-	-	-	120	116	118	116	90	100	114	-	-	-	-	68	68	78
37	793187	3	-	-	-	-	82	89	81	80	79	76	-	-	-	-	-	138	128	120	118	110	108	-	-	-	-	-	82	78	70
38	788656	3	3	-	-	-	88	86	87	88	82	81	78	-	-	-	-	130	124	124	118	110	118	110	-	-	-	-	80	78	80
39	642695	3	-	-	-	-	80	79	78	76	78	74	-	-	-	-	-	148	146	120	134	138	120	-	-	-	-	-	90	92	80
40	741453	-	-	-	-	-	76	75	74	72	72	-	-	-	-	-	-	138	130	132	132	128	-	-	-	-	-	-	72	70	70
41	54522	-	-	-	-	-	98	96	95	94	92	94	92	-	-	-	-	148	140	138	134	134	128	120	-	-	-	-	88	90	88
42	761709	3	-	-	-	-	80	82	79	78	76	72	70	72	-	-	-	128	120	124	120	118	110	98	118	-	-	-	74	72	76
43	705041	3	-	-	-	-	96	94	93	90	89	86	82	84	-	-	-	140	138	130	128	120	118	116	124	-	-	-	96	88	82
44	717748	3	3	-	-	-	74	77	76	77	74	72	70	-	-	-	-	120	118	110	118	110	116	100	-	-	-	-	70	70	70
45	501243	3	-	-	-	-	88	82	80	84	88	80	-	-	-	-	-	130	120	120	118	116	110	-	-	-	-	-	70	80	78
46	223089	-	-	-	-	-	73	72	70	68	69	66	70	-	-	-	-	140	138	130	108	112	110	112	-	-	-	-	94	90	90
47	681994	3	3	-	-	-	91	90	86	80	79	75	72	70	68	69	-	172	150	136	128	124	114	111	110	108	112	-	96	84	80
48	848229	-	-	-	-	-	94	90	88	85	-	-	-	-	-	-	-	140	130	132	120	-	-	-	-	-	-	-	80	82	78
49	833309	3	3	3	-	-	84	83	80	82	78	76	77	70	72	-	-	138	128	120	118	110	100	102	99	108	-	-	72	70	68
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51	802226	3	3	-	-	-	76	74	72	72	70	66	68	64	65	66	-	130	128	110	100	112	118	128	130	130	130	-	90	80	70
52	748299	3	3	-	-	-	98	96	95	94	92	90	88	-	-	-	-	160	150	148	130	128	120	128	-	-	-	-	100	90	78
53	734902	3	3	-	-	-	80	78	75	76	78	73	70	-	-	-	-	120	122	118	110	90	110	118	-	-	-	-	74	74	84
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56	722110	3	-	-	-	-	74	72	76	70	74	71	76	70	-	-	-	120	110	100	90	118	122	124	128	-	-	-	80	78	60
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59	686615	3	3	3	3	-	80	82	81	80	78	72	70	74	78	78	-	130	128	124	118	116	124	120	118	122	128	-	70	78	80
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61	116380	3	-	-	-	-	79	82	80	82	80	79	78	74	-	-	-	120	118	116	116	90	100	114	122	-	-	-	68	78	68
62	795478	-	-	-	-	-	62	64	62	61	60	-	-	-	-	-	-	130	128	118	100	108	-	-	-	-	-	-	90	70	68
63	480567	-	-	-	-	-	72	70	71	72	70	68	64	-	-	-	-	120	118	118	116	120	90	128	-	-	-	-	78	68	70
64	688371	3	3	3	-	-	88	85	80	81	78	79	76	74	-	-	-	124	120	118	120	126	118	110	112	-	-	-	70	70	78
65	5111	3	3	-	-	-	77	74	76	72	70	71	68	-	-	-	-	134	138	124	122	118	120	118	-	-	-	-	72	82	78
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67	770596	3	-	-	-	-	82	88	83	84	82	80	-	-	-	-	-	120	124	118	100	120	110	-	-	-	-	-	80	78	76
68	991109	-	-	-	-	-	90	90	88	86	86	84	-	-	-	-	-	128	120	116	120	120	118	-	-	-	-	-	88	68	68
69	709433	3	3	-	-	-	88	84	86	80	82	78	-	-	-	-	-	140	140	138	130	120	108	101	-	-	-	-	92	80	78
70	461418	3	-	-	-	-	88	85	84	80	82	82	-	-	-	-	-	130	128	120	118	116	102	-	-	-	-	-	96	76	80
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72	619198	3	3	-	-	-	87	84	85	82	80	81	80	-	-	-	-	134	148	140	120	112	112	110	-	-	-	-	80	92	90
73	599244	3	3	3	-	-	82	80	88	89	80	78	75	72	-	-	-	120	118	120	118	112	118	118	118	-	-	-	92	78	82
74	683702	-	-	-	-	-	82	62	59	58	60	62	-	-	-	-	-	140	124	112	103	110	118	120	-	-	-	-	80	56	58
75	794620	3	-	-	-	-	96	94	92	90	88	84	-	-	-	-	-	150	148	130	128	126	124	-	-	-	-	-	90	78	90
76	856682	-	-	-	-	-	88	80	88	81	78	77	76	-	-	-	-	180	170	168	140	130	120	118	-	-	-	-	95	90	82
77	795995	-	-	-	-	-	70	69	66	65	64	68	62	-	-	-	-	130	128	120	118	116	118	120	-	-	-	-	80	72	80
78	844810	3	3	3	-	-	67	64	66	63	60	62	61	60	62	-	-	130	124	124	118	110	120	110	120	118	-	-	80	80	78
79	788845	3	3	3	-	-	80	84	82	79	78	77	79	80	-	-	-	120	118	120	108	99	88	102	-	-	-	-	80	64	74
80	709652	3	3	-	-	-	80	82	83	82	80	81	78	-	-	-	-	140	130	124	120	120	116	120	-	-	-	-	90	88	72
81	647701	3	-	-	-	-	76	74	70	72	70	72	-	-	-	-	-	120	118	124	118	120	128	-	-	-	-	-	74	64	74

S.NO	CR NO.	DBP_15 min	DBP_20 min	DBP_25 min	DBP_30 min	DBP_40 min	DBP_50 min	DBP_60 min	DBP_70 min	MAP_0 min	MAP_5 min	MAP_10 min	MAP_15 min	MAP_20 min	MAP_25 min	MAP_30 min	MAP_40 min	MAP_50 min	MAP_60 min	MAP_70 min	SPO2_0 min	SPO2_5 min	SPO2_10 min	SPO2_15 min	SPO2_20 min	SPO2_25 min	SPO2_30 min	SPO2_40 min	SPO2_50 min	SPO2_60 min	SPO2_70 min
1	661758	58	56	58	-	-	-	-	-	63	64	60	59	50	69	-	-	-	-	-	99	99	98	98	98	98	-	-	-	-
2	48758	74	80	70	72	80	78	80	-	93	90	83	79	71	78	67	76	67	-	-	100	98	99	100	100	100	100	100	100	100	-
3	844906	72	73	78	78	74	68	-	-	76	79	71	72	63	66	68	79	83	-	-	98	98	98	98	99	98	99	99	99	-	-
4	846953	64	62	66	72	-	-	-	-	77	77	71	75	75	74	72	-	-	-	-	99	99	98	99	99	98	97	-	-	-	-
5	817728	71	78	80	76	68	80	70	-	80	78	70	68	66	67	60	67	67	63	-	98	98	98	98	98	98	98	98	98	98	-
6	796589	80	82	78	60	60	-	-	-	70	69	67	65	63	68	70	60	-	-	-	100	100	100	100	100	100	99	100	-	-	-
7	743419	64	74	78	78	74	78	74	-	77	77	71	75	75	76	76	69	71	77	-	100	100	100	100	100	100	100	100	100	100	-
8	182164	72	68	68	72	72	68	58	-	68	69	71	68	73	75	70	72	75	79	-	98	98	98	98	98	98	97	98	98	98	-
9	687038	54	78	84	84	72	72	74	-	73	70	59	52	66	68	70	72	76	71	-	98	98	98	98	98	98	98	98	98	98	-
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11	785031	80	76	68	80	74	-	-	-	87	78	77	67	67	70	67	69	-	-	-	98	98	98	98	98	98	98	-	-	-	-
12	684401	78	-	-	-	-	-	-	-	98	98	96	112	-	-	-	-	-	-	-	100	100	100	100	-	-	-	-	-	-	-
13	745061	60	72	62	80	72	-	-	-	72	65	74	50	70	71	67	72	-	-	-	100	100	100	100	99	100	100	100	-	-	-
14	870796	68	50	60	70	80	-	-	-	87	79	67	73	45	60	63	67	-	-	-	98	99	98	98	98	98	98	98	-	-	-
15	593279	72	70	74	78	-	-	-	-	59	66	65	70	63	63	66	-	-	-	-	99	99	98	99	98	98	98	-	-	-	-
16	838682	80	76	60	64	80	-	-	-	78	70	69	67	67	60	77	75	-	-	-	98	98	98	98	98	98	98	98	-	-	-
17	826769	80	76	80	-	-	-	-	-	90	80	76	67	71	67	-	-	-	-	-	98	98	98	98	98	98	-	-	-	-	-
18	844610	70	62	80	72	80	70	68	-	67	70	74	65	71	67	72	67	71	67	-	97	98	97	97	97	98	97	97	97	98	-
19	631715	74	78	68	78	-	-	-	-	87	86	77	79	68	83	66	-	-	-	-	98	98	98	98	98	98	98	-	-	-	-
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22	60847	80	80	70	68	60	80	-	-	80	75	85	67	65	63	67	70	75	-	-	98	98	98	98	98	98	98	98	-	-	-
23	788260	82	88	80	84	-	-	-	-	70	69	72	65	59	67	68	-	-	-	-	99	99	98	98	99	99	99	-	-	-	-
24	779908	80	70	68	80	74	-	-	-	70	73	68	67	63	63	67	73	-	-	-	99	99	99	98	98	99	98	98	-	-	-
25	853365	70	68	84	88	-	-	-	-	70	71	73	63	63	64	63	-	-	-	-	99	98	98	99	97	98	98	-	-	-	-
26	77059	72	80	68	70	68	70	-	-	90	77	84	76	67	73	63	67	63	-	-	98	98	98	99	98	98	98	98	98	-	-
27	838113	75	58	52	76	-	-	-	-	73	75	75	60	61	55	60	-	-	-	-	98	97	98	98	98	98	98	-	-	-	-
28	745767	58	72	74	76	72	-	-	-	69	69	63	61	72	73	73	80	-	-	-	96	96	96	97	96	96	97	96	-	-	-
29	801392	68	78	72	84	-	-	-	-	80	68	70	83	68	72	62	-	-	-	-	98	98	99	98	98	98	98	-	-	-	-
30	154040	80	74	70	68	-	-	-	-	88	78	73	77	78	73	76	-	-	-	-	98	98	98	98	98	98	98	-	-	-	-
31	115021	80	84	80	90	72	74	-	-	90	88	79	85	72	67	86	73	71	-	-	100	100	100	100	100	100	100	100	100	-	-
32	778239	70	80	70	70	-	-	-	-	73	70	74	65	67	71	63	-	-	-	-	98	99	98	99	99	99	99	-	-	-	-
33	181376	80	78	72	68	-	-	-	-	90	89	80	81	76	76	75	-	-	-	-	99	99	100	99	99	99	99	-	-	-	-
34	778277	72	70	68	60	62	-	-	-	82	79	76	72	71	75	76	71	-	-	-	99	99	99	99	99	99	99	99	-	-	-
35	774374	76	66	-	-	-	-	-	-	82	86	86	79	76	-	-	-	-	-	-	98	98	98	98	98	-	-	-	-	-	-
36	742441	88	58	60	72	-	-	-	-	75	70	65	59	51	60	66	-	-	-	-	99	99	99	99	99	99	99	-	-	-	-
37	793187	68	72	58	-	-	-	-	-	77	76	73	73	62	56	-	-	-	-	-	99	98	98	98	98	98	-	-	-	-	-
38	788656	78	75	66	73	-	-	-	-	77	68	76	66	60	74	63	-	-	-	-	98	98	98	98	98	98	98	-	-	-	-
39	642695	78	80	70	-	-	-	-	-	86	85	66	75	85	73	-	-	-	-	-	98	98	98	98	98	98	-	-	-	-	-
40	741453	68	70	-	-	-	-	-	-	90	83	85	87	81	-	-	-	-	-	-	99	99	99	99	99	-	-	-	-	-	-
41	54522	72	82	82	80	-	-	-	-	89	80	79	84	79	73	67	-	-	-	-	99	99	99	99	99	99	99	-	-	-	-
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43	705041	80	70	68	64	72	-	-	-	76	79	75	75	73	73	73	76	-	-	-	98	98	98	98	98	98	98	-	-	-	-
44	717748	68	76	72	60	-	-	-	-	74	72	63	72	60	68	60	-	-	-	-	98	98	98	98	98	98	98	-	-	-	-
45	501243	72	68	70	-	-	-	-	-	83	67	68	70	71	63	-	-	-	-	-	98	98	98	98	98	98	-	-	-	-	-
46	223089	78	78	70	68	-	-	-	-	77	78	70	56	60	63	57	-	-	-	-	98	98	97	98	98	98	98	-	-	-	-
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49	833309	60	58	62	56	50	68	-	-	90	81	75	78	71	59	65	66	63	-	-	97	96	97	97	97	97	97	97	-	-	-
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57	114546	70	60	90	84	-	-	-	-	71	73	62	63	50	58	62	-	-	-	-	98	98	99	98	98	98	98	-	-	-	-
58	788170	74	-	-	-	-	-	-	-	67	66	72	73	-	-	-	-	-	-	-	100	100	100	99	-	-	-	-	-	-	-
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63	480567	62	80	60	74	-	-	-	-	68	73	71	75	67	50	79	-	-	-	-	99	99	98	98	99	99	99	-	-	-	-
64	688371	74	76	72	78	76	-	-	-	77	73	66	71	71	70	59	61	-	-	-	99	99	98	98	99	99	98	98	-	-	-
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66	26745	76	78	78	70	-	-	-	-	82	79	67	73	68	66	63	-	-	-	-	98	98	98	98	98	98	98	-	-	-	-
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70	461418	76	68	80	-	-	-	-	-	66	77	67	67	70	48	-	-	-	-	-	98	98	98	98	97	97	97	-	-	-	-
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72	619198	80	80	76	75	-	-	-	-	94	87	80	67	59	61	60	-	-	-	-	98	98	98	98	98	98	-	-	-	-	-
73	599244	72	74	78	72	84	-	-	-	59	66	65	70	63	66	70	62	-	-	-	98	97	97	97	97	97	97	97	-	-	-
74	683702	56	72	78	80	-	-	-	-	87	83	73	66	62	66	67	-	-	-	-	98	98	98	98	98	98	98	-	-	-	-
75	794620	88	82	88	-	-	-	-	-	90	96	70	69	71	65	-	-	-	-	-	96	95	95	95	95	95	-	-	-	-	-
76	856682	90	82	74	80	-	-	-	-	116	110	113	80	76	71	65	-	-	-	-	95	94	96	95	95	95	95	-	-	-	-
77	795995	68	76	72	70	-	-	-	-	71	80	67	73	65	70	73	-	-	-	-	98	98	98	97	98	98	98	-	-	-	-
78	844810	78	73	78	75	72	66	-	-	77	76	68	66	63	68	60	72	74	-	-	97	97	96	97	97	97	97	97	97	-	-
79	788845	62	59	62	56	62	-	-	-	67	75	71	66	61	57	50	60	-	-	-	98	97	98	97	98	98	98	97	-	-	-
80	709652	74	80	76	80	-	-	-	-	80	72	86	71	66	65	67	-	-	-	-	98	98	98	98	98	97	98	-	-	-	-
81	647701	74	74	76	-	-	-	-	-	71	75	75	69	71	77	-	-	-	-	-	98	98	98	97	98	97	-	-	-	-	-

S.NO	CR NO.	RR_0 min	RR_5 min	RR_10 min	RR_15 min	RR_20 min	RR_25 min	RR_30 min	RR_40 min	RR_50 min	RR_60 min	RR_70 min	NV_0 min	NV_5 min	NV_10 min	NV_15 min	NV_20 min	NV_25 min	NV_30 min	NV_40 min	NV_50 min	NV_60 min	totalintro pn/v	PRURITIS_ 0 min	PRURITIS_ 5 min	PRURITIS_ 10 min	PRURITIS_ 15 min	PRURITIS_ 20 min	PRURITIS_ 25 min	PRURITIS_ 30 min	PRURITIS_ 40 min	PRURITIS_ 50 min
1	661758	18	18	17	18	18	17	-	-	-	-	-	A	A	A	P	P	A	-	-	-	-	P	A	A	A	P	P	P	-	-	-
2	48758	16	17	15	16	16	16	16	17	16	17	-	A	A	A	A	P	P	A	P	P	P	P	A	A	A	A	A	A	A	A	A
3	844906	18	17	18	18	18	18	17	17	18	18	-	A	A	A	A	A	A	A	A	A	-	A	A	A	A	A	A	A	A	A	A
4	846953	16	16	17	16	16	16	16	16	-	-	-	A	A	A	A	A	A	A	-	-	-	A	A	A	A	A	A	A	-	-	-
5	817728	16	16	16	16	17	16	16	16	16	16	-	A	A	A	A	A	A	P	A	A	P	P	A	A	A	A	A	A	P	A	P
6	796589	16	14	15	16	17	16	16	16	-	-	-	A	A	A	A	A	A	A	A	-	-	A	A	A	A	A	A	A	A	A	-
7	743419	18	18	18	17	16	17	18	18	18	18	-	A	A	A	A	A	A	A	A	A	A	A	A	P	P	A	P	P	A	A	P
8	182164	15	16	15	15	15	15	14	15	15	15	-	A	A	A	A	A	A	A	A	A	A	A	P	P	P	A	A	A	P	P	A
9	687038	19	20	18	20	20	20	20	20	20	20	-	A	A	P	P	P	P	A	A	A	A	P	A	P	P	P	P	A	P	A	A
10	842927	16	17	16	16	16	16	16	-	-	-	-	A	A	A	A	P	P	P	-	-	-	P	A	P	P	P	A	P	P	-	-
11	785031	18	18	18	17	18	19	19	19	-	-	-	A	A	A	P	P	A	P	P	-	-	P	A	A	A	A	A	A	A	A	-
12	684401	19	18	19	19	-	-	-	-	-	-	-	A	A	A	A	-	-	-	-	-	-	A	A	A	A	A	-	-	-	-	-
13	745061	18	19	19	18	18	18	18	18	-	-	-	A	A	A	P	P	A	A	A	-	-	P	A	A	A	A	A	A	A	A	-
14	870796	16	17	17	16	16	16	16	16	-	-	-	A	A	P	P	P	P	P	P	-	-	P	A	A	A	A	A	A	A	A	-
15	593279	16	17	16	16	16	16	16	-	-	-	-	A	A	A	A	A	A	A	-	-	-	A	A	A	A	A	A	A	-	-	-
16	838682	15	15	15	15	16	15	15	15	-	-	-	A	A	A	A	P	P	P	A	-	-	P	A	P	P	P	P	A	A	A	-
17	826769	14	15	14	14	16	15	-	-	-	-	-	A	A	A	A	A	A	-	-	-	-	A	A	A	A	A	A	A	-	-	-
18	844610	16	16	17	16	16	16	16	16	16	16	-	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
19	631715	14	14	15	16	14	14	14	-	-	-	-	A	A	A	A	P	A	P	-	-	-	P	A	A	A	A	A	A	A	-	-
20	838678	14	14	14	15	14	14	14	14	-	-	-	A	A	A	A	A	A	A	A	-	-	A	A	A	A	A	A	A	A	A	-
21	853850	18	18	18	18	17	17	18	-	-	-	-	A	A	A	P	A	P	P	-	-	-	P	A	A	P	P	P	P	P	-	-
22	60847	14	14	14	14	14	14	14	14	14	-	-	A	A	A	A	P	P	A	A	A	-	A	A	A	A	A	P	A	A	A	A
23	788260	18	17	18	18	18	18	18	-	-	-	-	A	A	A	A	A	A	A	-	-	-	A	A	A	A	A	A	A	A	-	-
24	779908	15	14	14	14	15	16	14	15	-	-	-	A	A	A	A	A	A	A	A	A	-	A	A	A	A	A	A	A	A	A	-
25	853365	16	16	16	15	16	17	16	-	-	-	-	A	A	A	A	A	A	A	-	-	-	A	A	A	A	A	A	A	A	-	-
26	77059	18	17	18	18	18	18	18	18	18	-	-	A	A	A	A	A	A	P	P	P	-	P	A	P	P	P	P	P	A	P	P
27	838113	16	16	17	16	16	17	16	-	-	-	-	A	A	A	A	A	P	A	-	-	-	A	A	P	P	P	P	A	A	-	-
28	745767	18	18	17	18	18	18	18	18	-	-	-	A	A	A	A	A	A	A	A	-	-	A	A	A	A	A	A	A	A	A	-
29	801392	16	16	15	16	16	16	15	-	-	-	-	A	A	A	A	A	A	P	-	-	-	P	A	A	A	A	A	A	A	-	-
30	154040	16	16	16	16	15	16	16	-	-	-	-	A	A	A	A	A	A	A	-	-	-	A	A	A	A	A	A	A	A	-	-
31	115021	16	16	17	16	16	16	16	16	16	-	-	A	A	A	A	A	P	A	A	A	-	P	A	A	A	A	A	A	A	A	A
32	778239	16	16	16	15	16	16	16	-	-	-	-	A	A	A	A	A	A	A	-	-	-	A	A	A	A	A	A	A	A	-	-
33	181376	17	16	16	17	17	17	16	-	-	-	-	A	A	A	A	A	A	A	-	-	-	A	A	P	P	P	A	P	P	-	-
34	778277	14	13	15	15	14	14	14	14	-	-	-	A	A	A	A	P	A	A	P	-	-	P	A	A	A	A	A	A	A	A	-
35	774374	16	16	17	16	16	-	-	-	-	-	-	A	A	A	A	A	-	-	-	-	-	A	P	P	P	P	P	-	-	-	-
36	742441	16	16	16	17	15	17	16	-	-	-	-	A	A	A	A	P	A	A	-	-	-	A	A	A	A	A	A	A	A	-	-
37	793187	18	18	18	18	18	18	-	-	-	-	-	A	A	A	A	P	P	-	-	-	-	P	A	A	A	A	A	A	-	-	-
38	788656	14	14	14	14	14	14	14	-	-	-	-	A	A	A	P	P	A	P	-	-	-	P	A	P	A	P	P	P	A	-	-
39	642695	16	15	16	15	16	16	-	-	-	-	-	A	A	A	A	A	A	A	-	-	-	A	A	P	P	A	P	A	-	-	-
40	741453	16	15	16	16	16	-	-	-	-	-	-	A	A	A	A	A	-	-	-	-	-	A	A	A	A	A	A	-	-	-	-
41	54522	16	16	15	16	16	16	15	-	-	-	-	A	A	A	A	A	A	P	-	-	-	P	A	A	A	A	A	A	A	-	-
42	761709	18	18	18	17	18	18	18	18	-	-	-	A	A	A	A	A	A	P	A	-	-	A	A	A	A	A	A	A	A	A	-
43	705041	16	16	15	15	15	16	15	16	-	-	-	A	A	A	A	A	A	A	A	-	-	A	A	A	A	A	A	A	A	A	-
44	717748	17	16	16	16	16	16	16	-	-	-	-	A	A	A	A	P	A	P	-	-	-	P	A	A	A	A	A	A	A	-	-
45	501243	17	16	17	18	17	16	-	-	-	-	-	A	A	A	A	A	A	-	-	-	-	A	P	P	P	P	A	A	-	-	-
46	223089	20	20	18	20	19	19	18	-	-	-	-	A	A	A	P	A	P	P	-	-	-	P	A	A	A	A	A	A	A	-	-
47	681994	20	20	20	19	19	18	20	20	19	20	-	A	A	A	P	P	P	P	A	A	A	P	A	A	A	A	A	A	A	A	A
48	848229	18	18	19	18	-	-	-	-	-	-	-	A	A	A	A	-	-	-	-	-	-	A	P	P	P	P	-	-	-	-	-
49	833309	18	17	16	18	18	17	18	18	18	-	-	A	A	A	A	P	P	P	P	P	-	P	A	A	A	A	A	A	A	A	A
50	676482	16	16	17	16	16	16	-	-	-	-	-	A	A	A	A	A	A	-	-	-	-	A	A	A	A	A	A	A	-	-	-
51	802226	15	16	16	15	15	15	15	15	15	14	-	A	A	A	A	A	A	A	A	A	A	A	A	P	P	P	P	P	P	P	P
52	748299	18	18	18	17	18	18	18	-	-	-	-	A	A	A	P	A	P	A	-	-	-	P	A	A	P	A	P	A	P	-	-
53	734902	18	18	17	18	17	18	18	-	-	-	-	A	A	A	A	P	P	A	-	-	-	P	A	A	P	A	P	A	A	-	-
54	700569	16	16	17	18	17	16	16	16	-	-	-	A	A	A	A	P	A	A	A	-	-	P	A	P	P	P	P	P	A	P	-
55	837587	16	16	16	17	15	16	16	17	-	-	-	A	A	A	A	P	P	A	A	-	-	A	A	A	A	A	A	A	A	A	-
56	722110	18	17	18	19	18	17	17	18	-	-	-	A	A	A	P	A	A	A	A	-	-	P	A	A	A	A	A	A	A	A	-
57	114546	16	16	16	17	16	17	16	-	-	-	-	A	A	P	P	P	P	P	-	-	-	P	P	P	P	P	A	P	A	-	-
58	788170	16	16	17	16	-	-	-	-	-	-	-	A	A	A	A	-	-	-	-	-	-	A	A	A	A	A	-	-	-	-	-
59	686615	20	20	18	20	20	17	18	20	20	20	-	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
60	686026	20	20	19	18	19	19	20	20	20	20	-	A	A	A	P	A	A	P	P	P	A	P	A	A	A	A	A	A	A	A	A
61	116380	20	19	20	18	20	20	20	20	-	-	-	A	A	A	A	P	A	A	A	-	-	A	A	A	A	A	A	A	A	A	-
62	795478	18	18	17	18	19	-	-	-	-	-	-	A	A	A	P	A	-	-	-	-	-	P	A	A	P	P	A	-	-	-	-
63	480567	16	16	16	18	16	16	17	-	-	-	-	A	A	A	A	P	P	A	-	-	-	P	A	A	P	A	P	A	A	-	-
64	688371	18	18	18	18	18	18	18	18	-	-	-	A	A	A	A	A	A	A	A	-	-	A	A	A	A	A	A	A	A	A	-
65	5111	16	16	18	17	17	16	16	-	-	-	-	A	A	A	A	P	A	A	-	-	-	A	A	A	P	P	A	A	A	-	-
66	26745	16	16	17	16	17	16	17	-	-	-	-	A	A	A	A	A	A	P	-	-	-	P	A	A	A	A	A	A	A	-	-
67	770596	15	15	16	15	15	15	-	-	-	-	-	A	A	A	P	A	P	-	-	-	-	P	A	A	A	A	A	A	-	-	-
68	991109	16	15	16	16	15	15	15	-	-	-	-	A	A	A	A	A	A	-	-	-	-	A	A	A	A	A	A	A	-	-	-
69	709433	18	18	17	18	18	18	17	-	-	-	-	A	A	A	A	A	P	P	-	-	-	P	A	A	P	P	P	P	A	-	-
70	461418	16	16	17	16	17	16	17	-	-	-	-	A	A	A	A	P	P	-	-	-	-	P	A	P	P	P	A	P	-	-	-
71	808033	16	16	15	16	16	15	-	-	-	-	-	P	P	A	A	P	P	-	-	-	-	P	A	A	A	A	A	A	-	-	-
72	619198	16	16	17	15	16	16	16	-	-	-	-	A	A	A	P	P	P	P	-	-	-	P	A	A	A	A	A	A	A	-	-
73	599244	15	15	15	15	16	16	15	15	-	-	-	A	A	A	A	A	A	A	-	-	-	A	A	A	A	A	A	A	A	-	-
74	683702	20	18	19	20	20	20	20	-	-	-	-	A	A	A	A	P	A	A	-	-	-	P	A	A	A	A	A	A	A	-	-
75	794620	18	18	18	18	18	18	-	-	-	-	-	A	A	P	A	P	A	-	-	-	-	P	A	P	P	P	P	P	-	-	-
76	856682	16	16	15	17	16	16	16	-	-	-	-	A	A	A	A	A	A	P	-	-	-	P	A	A	A	A	A	A	A	-	-
77	795995	18	18	17	18	18	17	17	-	-	-	-	A	A	A	A	A	A	A	-	-	-	A	A	A	A	A	A	A	A	-	-
78	844810	18	18	17	17	18	18	17	18	17	-	-	A	A	A	A	A	A	P	A	A	-	P	A	A	A	A	A	A	A	A	A
79	788845	16	16	17	16	17	16	17	16	-	-	-	A	A	A	A	A	A	A	A	-	-	A	A	A	A	A	A	A	P	P	-
80	709652	16	17	17	18	16	18	17	-	-	-	-	A	A	A	A	P	A	A	-	-	-	A	A	A	A	A	A	A	A	-	-
81	647701	17	16	17	17	16	17	-	-	-	-	-	A	A	A	A	A	A	-	-	-	-	A	A	A	P	P	P	P	-	-	-

S.NO	CR NO.	PRURITIS_60 min	PRURITIS_70 min	TOTALINTRAOPPRURITIS	HYPOTENSION_0 min	HYPOTENSION_5 min	HYPOTENSION_10 min	HYPOTENSION_15 min	HYPOTENSION_20 min	HYPOTENSION_25 min	HYPOTENSION_30 min	HYPOTENSION_40 min	HYPOTENSION_50 min	HYPOTENSION_60 min	Totalintraophypotensiom	POST HR_MIN	POST HR_15MIN	POST HR_30MIN	POST HR_45MIN	POST HR_1HR	POST HR_1.5 Hr	POST HR_2 Hr	POST HR_2.5 Hr	POST HR_3 Hr	POST HR_3.5 Hr	POST HR_4 Hr	POST HR_8 Hr	POST HR_12 Hr	POST HR_16 Hr	POST HR_20 Hr	POST HR_24 Hr
1	661758	-	-	P	A	A	A	A	P	A	-	-	-	-	P	60	61	65	63	62	62	65	68	61	62	65	60	68	66	62	68
2	48758	A	-	P	A	A	A	A	P	P	A	P	A	P	P	78	78	77	79	80	81	78	79	78	76	78	79	80	79	78	77
3	844906	-	-	A	A	A	A	A	A	A	A	A	A	-	A	86	85	84	85	88	89	90	88	89	86	87	88	84	87	88	88
4	846953	-	-	A	A	A	A	A	A	A	A	-	-	-	A	84	83	82	86	84	90	88	87	85	86	84	88	89	90	88	89
5	817728	A	-	P	A	A	A	A	A	A	P	A	A	P	P	70	71	68	69	70	69	68	65	64	70	71	70	72	69	70	68
6	796589	-	-	A	A	A	A	A	A	A	A	A	-	-	A	70	71	69	68	67	72	70	71	77	76	74	74	73	72	70	68
7	743419	P	-	P	A	A	A	A	A	A	A	A	A	A	A	69	69	72	74	73	68	70	74	76	78	74	70	74	72	70	72
8	182164	P	-	P	A	A	A	A	A	A	A	A	A	A	A	62	64	66	68	69	70	72	71	70	72	68	69	70	71	72	70
9	687038	A	-	P	A	A	P	P	A	A	A	A	A	A	P	68	69	70	72	75	72	70	78	80	81	82	80	79	80	81	81
10	842927	-	-	P	A	A	A	A	P	P	P	-	-	-	P	76	78	79	77	76	79	77	76	75	74	79	77	76	78	79	77
11	785031	-	-	P	A	A	A	P	P	A	P	P	-	-	P	77	74	78	72	70	72	77	74	71	74	80	82	86	88	83	80
12	684401	-	-	A	A	A	A	A	-	-	-	-	-	-	A	56	52	52	53	53	60	62	70	72	74	78	76	79	76	72	72
13	745061	-	-	P	A	A	A	P	A	A	A	A	-	-	P	73	71	70	72	71	72	74	75	76	77	70	72	71	73	72	70
14	870796	-	-	P	A	A	P	A	P	P	P	P	-	-	P	66	67	65	60	66	62	68	66	69	60	64	62	68	66	69	62
15	593279	-	-	A	A	A	A	A	A	A	A	-	-	-	A	68	67	65	60	62	68	67	68	69	70	71	70	69	70	71	72
16	838682	-	-	P	A	A	A	A	A	P	A	A	-	-	P	78	77	76	78	79	84	80	82	81	83	84	82	83	89	82	82
17	826769	-	-	A	A	A	A	A	A	A	-	-	-	-	A	88	89	90	91	92	89	88	89	90	91	89	88	87	86	88	88
18	844610	A	-	A	A	A	A	A	A	A	A	A	A	A	A	62	61	60	61	62	64	62	69	68	62	63	60	63	68	68	62
19	631715	-	-	P	A	A	A	A	P	A	P	-	-	-	P	82	84	86	87	88	81	84	83	82	83	84	85	86	87	88	82
20	838678	-	-	A	A	A	A	A	A	A	A	A	-	-	A	82	81	80	79	78	77	76	80	82	81	83	82	80	81	82	82
21	853850	-	-	P	A	A	A	P	A	P	P	-	-	-	P	92	90	89	88	87	90	91	92	91	90	89	90	88	87	88	92
22	60847	-	-	P	A	A	A	A	A	P	A	A	A	-	P	75	76	73	74	70	74	70	72	71	71	73	74	75	76	79	80
23	788260	-	-	A	A	A	A	A	A	A	A	-	-	-	A	68	68	69	70	71	76	72	75	76	77	74	72	71	70	72	70
24	779908	-	-	A	A	A	A	A	A	A	A	A	-	-	A	63	63	66	67	62	71	75	73	72	70	71	76	72	74	77	78
25	853365	-	-	A	A	A	A	A	A	A	A	-	-	-	A	74	70	72	73	72	74	77	76	74	78	72	70	71	70	77	74
26	77059	-	-	P	A	A	A	A	A	A	P	A	P	-	P	75	74	76	74	79	82	79	80	81	76	77	76	80	82	84	82
27	838113	-	-	P	A	A	A	A	A	P	A	-	-	-	P	68	68	69	67	66	72	74	68	69	71	73	72	70	68	72	70
28	745767	-	-	A	A	A	A	A	A	A	A	A	-	-	A	78	76	74	72	70	76	74	73	72	77	78	74	76	78	80	78
29	801392	-	-	A	A	A	A	A	A	A	P	-	-	-	P	82	82	80	81	80	78	88	83	84	82	83	84	85	88	82	88
30	154040	-	-	A	A	A	A	A	A	A	A	-	-	-	A	82	80	79	80	81	82	81	80	84	86	82	88	82	78	82	78
31	115021	-	-	P	A	A	A	A	A	P	A	A	A	-	P	56	58	57	55	56	64	61	59	62	65	67	66	60	62	63	65
32	778239	-	-	A	A	A	A	A	A	A	A	-	-	-	A	76	74	72	75	77	83	79	82	80	79	72	79	84	80	82	76
33	181376	-	-	P	A	A	A	A	A	A	A	-	-	-	A	76	77	79	80	81	81	79	78	77	76	80	81	84	86	87	86
34	778277	-	-	P	A	A	A	A	P	A	A	P	-	-	P	74	78	77	79	80	85	82	82	79	81	80	82	84	82	84	81
35	774374	-	-	P	A	A	A	A	A	-	-	-	-	-	A	86	84	88	83	82	89	87	88	82	80	83	88	83	82	80	84
36	742441	-	-	A	A	A	A	A	A	A	A	-	-	-	A	80	81	82	84	86	77	82	86	88	82	84	88	86	83	82	84
37	793187	-	-	P	A	A	A	A	P	P	-	-	-	-	P	76	74	70	72	77	80	82	83	78	84	72	82	84	78	81	82
38	788656	-	-	P	A	A	A	A	P	A	P	-	-	-	P	82	80	81	84	83	86	82	88	82	81	84	85	88	87	82	86
39	642695	-	-	P	A	A	A	A	A	A	-	-	-	-	A	76	75	77	78	76	79	80	81	78	82	78	79	78	82	80	77
40	741453	-	-	A	A	A	A	A	A	-	-	-	-	-	A	73	72	70	72	74	78	72	73	76	79	76	78	72	79	72	79
41	54522	-	-	P	A	A	A	A	A	A	P	-	-	-	P	82	80	79	80	81	83	82	80	89	83	84	83	82	80	82	84
42	761709	-	-	A	A	A	A	A	A	A	P	A	-	-	P	74	72	70	76	77	74	77	80	82	79	80	82	80	82	84	79
43	705041	-	-	A	A	A	A	A	A	A	A	A	-	-	A	84	83	80	84	88	90	91	92	94	93	93	91	90	91	92	94
44	717748	-	-	P	A	A	A	A	P	A	P	-	-	-	P	72	76	73	76	77	81	82	79	82	84	82	80	82	81	82	84
45	501243	-	-	P	A	A	A	A	A	A	-	-	-	-	A	84	82	84	80	82	83	84	89	80	82	85	88	86	89	80	82
46	223089	-	-	P	A	A	A	P	A	A	P	-	-	-	P	66	68	64	72	70	76	72	70	72	77	76	78	79	74	77	72
47	681994	A	-	P	A	A	A	P	P	P	A	A	A	A	P	65	66	78	70	68	80	79	78	77	72	79	70	72	78	84	82
48	848229	-	-	P	A	A	A	A	-	-	-	-	-	-	A	84	85	88	86	88	90	91	89	84	87	89	90	93	92	90	89
49	833309	-	-	P	A	A	A	A	P	P	P	P	P	-	P	78	74	78	72	74	78	79	80	84	81	82	80	83	80	78	82
50	676482	-	-	P	A	A	A	A	A	A	-	-	-	-	A	84	82	88	87	81	94	88	87	88	82	80	81	88	93	92	88
51	802226	P	-	P	A	A	A	A	A	A	A	A	A	A	A	68	69	70	71	72	72	73	74	76	70	66	78	77	72	70	78
52	748299	-	-	P	A	A	A	P	A	P	A	-	-	-	P	88	89	80	89	82	94	95	89	90	92	94	96	93	92	90	94
53	734902	-	-	P	A	A	A	A	P	P	A	-	-	-	P	75	77	78	70	72	71	76	76	72	70	72	76	78	71	72	70
54	700569	-	-	P	A	A	A	A	P	A	A	A	-	-	P	89	86	80	82	80	80	82	90	91	92	90	93	94	90	92	92
55	837587	-	-	A	A	A	A	A	P	A	A	A	-	-	A	74	73	72	76	78	77	72	70	72	78	80	82	84	81	80	82
56	722110	-	-	P	A	A	A	P	A	A	A	A	-	-	A	71	78	75	78	76	72	76	78	73	71	70	74	78	74	78	79
57	114546	-	-	P	A	A	P	P	P	P	P	-	-	-	P	80	78	76	78	77	82	86	88	80	82	78	88	82	86	88	81
58	788170	-	-	A	A	A	A	A	-	-	-	-	-	-	A	71	70	69	66	72	62	64	70	72	68	79	71	74	78	77	72
59	686615	A	-	A	A	A	A	A	A	A	A	A	A	A	A	72	78	76	70	72	80	82	84	86	80	72	78	80	81	80	82
60	686026	A	-	P	A	A	A	P	A	A	P	P	P	A	P	78	70	68	72	74	80	82	81	79	81	80	84	86	88	81	84
61	116380	-	-	A	A	A	A	A	P	A	A	A	-	-	A	80	82	84	82	82	86	82	80	76	78	79	80	82	84	82	80	88
62	795478	-	-	P	A	A	A	P	A	-	-	-	-	-	P	66	62	60	63	66	61	66	68	67	61	60	62	64	69	65	60
63	480567	-	-	P	A	A	A	A	A	P	A	-	-	-	P	68	70	72	70	68	72	70	72	-	76	78	70	71	72	68	69
64	688371	-	-	A	A	A	A	A	A	A	A	A	-	-	A	76	77	79	70	73	84	86	88	85	82	85	87	80	81	83	82
65	5111	-	-	P	A	A	A	A	P	A	A	A	-	-	A	78	76	73	78	79	70	71	70	72	78	72	74	76	71	70	71
66	26745	-	-	P	A	A	A	A	A	A	P	-	-	-	P	67	68	62	60	72	75	80	82	85	86	72	88	82	86	80	82
67	770596	-	-	P	A	A	A	P	A	P	-	-	-	-	P	88	87	84	80	79	79	74	83	76	77	72	70	72	78	71	80
68	991109	-	-	A	A	A	A	A	A	A	-	-	-	-	A	82	84	82	86	80	86	87	80	83	87	89	80	79	82	87	82
69	709433	-	-	P	A	A	A	A	A	A	P	-	-	-	P	84	82	80	82	88	72	77	81	82	84	86	82	80	81	88	82
70	461418	-	-	P	A	A	A	A	A	P	-	-	-	-	P	80	82	85	80	82	83	85	80	81	80	82	86	84	80	86	82
71	808033	-	-	P	P	P	A	A	P	P	A	A	-	-	P	84	82	80	79	80	80	78	77	84	82	83	82	80	88	86	88
72	619198	-	-	P	A	A	A	P	P	P	P	-	-	-	P	84	86	88	80	89	83	80	88	86	84	88	81	88	82	82	80
73	599244	-	-	A	A	A	A	A	A	A	A	-	-	-	A	79	78	80	82	84	79	73	88	84	82	86	80	82	87	88	80
74	683702	-	-	P	A	A	A	A	P	A	A	-	-	-	P	66	63	67	68	61	70	72	70	67	69	63	68	70	70	72	69
75	794620	-	-	P	A	A	P	A	P	A	-	-	-	-	P	84	88	86	83	79	80	83	86	80	81	83	82	80	86	93	94
76	856682	-	-	P	A	A	A	A	A	A	P	-	-	-	P	80	78	78	80	82	78	76	79	80	81	80	82	84	88	80	82
77	795995	-	-	A	A	A	A	A	A	A	A	-	-	-	A	65	66	68	70	72	72	72	76	78	67	69	72	74	72	70	72
78	844810	-	-	P	A	A	A	A	A	A	P	A	A	-	P	65	66	68	69	62	66	68	65	60	62	60	67	64	68	69	62
79	788845	-	-	P	A	A	A	A	A	A	A	A	-	-	A	98	80	82	84	86	79	82	81	78	86	80	84	82	86	77	79
80	709652	-	-	A	A	A	A	A	P	A	A	-	-	-	P	80	81	80	78	82	84	80	80	82	81	80	81	80	82	80	78
81	647701	-	-	P	A	A	A	A	A	A	-	-	-	-	A	66	68	70	72	73	79	70	76	70	72	75	70	72	70	71	72

S.NO	CR NO.	POST SBP_MIN	POST SBP_15MIN	POST SBP_30MIN	POST SBP_45MIN	POST SBP_1HR	POST SBP_1.5 Hr	POST SBP_2 Hr	POST SBP_2.5 Hr	POST SBP_3 Hr	POST SBP_3.5 Hr	POST SBP_4 Hr	POST SBP_8 Hr	POST SBP_12 Hr	POST SBP_16 Hr	POST SBP_20 Hr	POST SBP_24 Hr	POST DBP_MIN	POST DBP_15MIN	POST DBP_30MIN	POST DBP_45MIN	POST DBP_1HR	POST DBP_1.5 Hr	POST DBP_2 Hr	POST DBP_2.5 Hr	POST DBP_3 Hr	POST DBP_3.5 Hr	POST DBP_4 Hr	POST DBP_8 Hr	POST DBP_12 Hr	POST DBP_16 Hr
1	661758	118	118	110	120	120	120	128	120	110	118	128	126	122	120	120	124	80	80	70	80	86	74	63	68	72	78	68	82	78	80
2	48758	120	128	120	122	120	128	120	130	130	130	120	130	124	130	128	130	80	72	72	74	76	72	74	72	80	90	74	72	80	90
3	844906	120	122	124	124	128	128	122	128	122	128	120	124	128	122	124	120	70	78	74	76	78	72	74	82	74	78	68	74	82	74
4	846953	120	128	130	138	134	138	134	138	134	136	134	138	130	130	134	136	78	78	80	78	72	76	72	82	72	86	72	88	90	72
5	817728	124	110	124	124	130	124	120	130	130	124	132	119	128	138	134	130	78	76	78	80	72	74	72	88	76	96	72	68	88	72
6	796589	120	124	128	128	118	124	120	118	124	130	130	140	138	124	128	148	78	76	78	78	78	76	80	78	76	80	90	94	90	68
7	743419	120	118	128	118	124	120	130	128	124	124	120	120	120	124	124	120	74	78	68	74	78	74	80	78	76	68	78	78	76	78
8	182164	120	118	120	124	120	112	128	118	122	118	120	120	118	122	118	118	68	78	72	74	68	72	72	84	68	68	78	72	70	66
9	687038	122	120	122	110	120	120	130	132	128	124	130	128	130	126	130	132	68	64	60	70	80	70	76	78	76	80	80	68	72	72
10	842927	138	134	134	140	138	144	134	142	150	148	148	142	150	134	142	148	88	72	77	90	82	74	72	88	90	78	80	80	90	77
11	785031	130	124	124	130	124	120	128	130	124	124	128	130	130	134	138	130	72	78	80	80	76	74	78	88	76	78	68	72	74	72
12	684401	116	108	106	118	120	120	120	112	118	128	108	128	116	120	112	130	70	70	72	72	76	68	68	78	72	78	74	68	74	78
13	745061	144	136	134	130	128	140	134	142	138	140	122	134	138	138	134	138	88	86	72	90	82	90	72	80	76	90	74	72	82	86
14	870796	120	118	110	124	120	120	124	120	124	124	130	130	128	124	128	130	80	80	70	74	74	80	76	74	76	80	72	90	78	80
15	593279	128	120	128	118	120	130	130	120	130	118	128	120	128	120	128	118	72	72	76	84	76	72	90	80	90	84	78	72	76	80
16	838682	120	124	120	122	120	122	124	124	120	118	110	120	124	134	120	128	80	78	80	78	76	74	72	80	74	64	76	68	68	72
17	826769	120	128	120	122	120	138	134	134	138	148	150	142	134	144	136	150	80	72	72	74	74	88	77	77	76	78	88	80	72	68
18	844610	120	128	130	130	130	138	130	130	134	130	120	128	128	138	146	140	78	78	80	72	90	88	90	72	72	80	68	72	68	88
19	631715	118	122	126	134	128	128	130	128	124	120	120	128	126	128	134	138	72	80	72	80	76	68	80	68	80	70	68	68	70	72
20	838678	120	128	122	124	124	128	128	130	124	124	128	120	124	128	128	120	80	80	78	74	72	72	68	90	74	80	68	80	80	63
21	853850	120	124	110	118	124	124	126	124	130	132	118	132	138	130	128	130	74	78	76	78	78	76	76	76	80	96	72	72	90	72
22	60847	120	118	118	120	122	128	120	130	128	130	128	130	130	134	130	130	78	78	72	74	74	78	70	80	68	90	72	88	80	72
23	788260	134	130	134	136	138	130	134	136	128	134	136	136	130	138	138	138	72	72	72	80	76	90	72	80	78	72	80	86	80	82
24	779908	120	120	124	120	120	128	110	120	130	122	128	128	130	128	122	128	80	78	82	74	72	68	70	74	90	74	72	68	72	68
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29	801392	122	120	120	120	124	120	126	130	120	132	130	124	130	124	130	130	74	74	72	74	80	74	76	88	74	96	72	68	80	80
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31	115021	148	150	150	148	138	150	150	148	150	150	150	154	148	150	150	156	78	88	80	78	88	90	80	90	78	88	90	96	90	78
32	778239	120	114	112	122	124	128	134	118	128	124	124	124	126	134	130	128	80	70	68	80	80	72	77	72	68	76	68	76	70	72
33	181376	130	138	138	134	138	142	138	140	134	140	138	130	138	134	142	148	90	82	86	72	88	80	76	90	72	92	88	72	88	72
34	778277	128	130	130	130	128	130	138	138	138	134	130	120	138	146	138	130	78	80	72	80	72	90	76	82	88	72	80	68	88	86
35	774374	120	128	128	124	124	120	128	132	130	138	130	140	138	130	130	132	70	76	78	80	74	74	72	96	72	82	76	80	78	72
36	742441	118	116	128	122	124	128	130	128	130	134	130	134	130	138	134	136	78	76	76	74	74	68	80	78	88	72	72	72	72	72
37	793187	108	102	116	118	120	112	118	128	116	130	118	118	128	128	120	118	70	72	70	72	76	68	72	68	74	80	72	78	78	76
38	788656	124	120	124	128	130	130	130	128	128	128	130	120	128	128	130	122	74	74	76	78	90	88	80	72	68	72	72	68	68	72
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41	54522	120	128	130	134	138	136	134	148	140	156	140	130	128	128	130	134	78	78	80	72	76	80	72	78	80	88	90	72	78	72
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46	223089	126	118	118	126	120	110	108	116	118	124	120	128	120	118	118	128	82	78	80	78	74	72	70	78	68	78	70	74	70	66
47	681994	112	108	108	110	114	110	108	120	128	118	116	120	110	118	122	126	72	72	68	72	74	78	72	74	72	68	68	80	80	72
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51	802226	130	130	124	124	120	124	128	130	124	128	134	134	136	134	120	134	80	72	68	76	68	76	74	80	68	82	72	72	80	72
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53	734902	124	124	130	132	120	128	128	124	120	128	130	120	128	130	128	128	76	80	90	96	74	72	78	76	80	72	72	74	68	72
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58	788170	122	120	118	124	120	128	130	120	128	124	130	120	128	130	128	124	74	72	84	78	74	72	80	68	72	76	72	68	72	72
59	686615	120	118	110	118	110	120	124	120	124	124	130	124	130	128	130	130	78	78	76	64	76	80	76	74	80	76	80	76	90	68
60	686026	110	122	120	124	130	120	128	130	122	122	120	118	124	120	124	120	74	58	80	78	88	76	80	84	74	78	80	78	72	68
61	116380	120	128	124	118	120	122	118	122	128	120	120	116	128	122	120	128	78	76	74	78	70	74	78	74	68	70	78	76	76	74
62	795478	110	118	110	120	130	120	124	124	130	128	130	130	128	122	128	134	76	64	76	78	80	74	80	76	80	68	72	96	68	70
63	480567	120	118	124	124	120	130	124	124	120	128	138	130	120	130	132	130	74	64	80	68	80	80	80	68	80	78	90	80	78	90
64	688371	120	120	118	120	120	128	118	124	134	130	130	130	124	128	134	138	80	76	84	76	80	78	64	68	72	72	80	72	78	68
65	5111	126	132	118	122	132	128	120	128	120	128	130	130	134	147	142	134	74	70	72	80	96	68	72	76	74	72	72	90	72	80
66	26745	120	128	130	124	128	120	130	130	128	120	124	124	130	138	130	140	78	68	72	76	78	68	80	90	68	80	74	68	80	90
67	770596	120	124	120	120	130	124	120	118	110	120	124	134	120	128	138	134	80	78	80	76	88	80	74	64	76	68	68	72	74	72
68	991109	120	120	124	120	128	120	122	118	124	130	128	120	120	128	124	124	68	72	74	68	76	78	66	70	76	80	68	74	80	68
69	709433	108	118	120	128	134	130	136	134	136	130	136	138	138	136	138	140	70	72	68	78	72	90	80	72	80	80	86	80	88	80
70	461418	124	124	124	130	124	130	124	130	128	130	130	124	130	130	130	130	78	80	78	80	76	72	80	72	68	80	70	76	72	80
71	808033	118	122	124	124	128	124	120	128	130	120	128	130	122	128	136	120	84	74	80	76	76	76	80	72	72	74	68	72	74	72
72	619198	128	120	124	120	130	128	128	126	130	124	134	130	124	134	128	130	78	80	74	74	90	76	68	70	90	76	72	80	80	80
73	599244	128	120	128	118	120	130	120	128	120	128	118	134	120	118	124	128	72	72	76	84	76	72	80	78	72	76	84	72	80	64
74	683702	120	110	110	110	124	124	120	122	124	130	118	128	122	128	122	120	60	70	80	64	78	80	60	68	78	80	78	74	60	78
75	794620	138	124	134	134	140	148	142	144	147	142	150	148	130	136	138	130	88	78	72	77	90	78	88	74	80	80	90	90	90	80
76	856682	120	120	124	110	128	130	124	124	124	120	118	128	130	124	124	130	80	74	80	75	68	80	74	76	80	74	64	78	88	76
77	795995	128	124	120	120	118	128	138	130	130	124	134	130	136	134	136	138	78	76	78	80	78	78	90	80	72	80	72	72	86	72
78	844810	124	120	124	128	130	130	130	130	128	130	128	128	130	120	128	128	74	74	76	78	90	88	72	80	72	72	68	72	72	68
79	788845	108	110	124	128	124	128	120	128	124	120	122	124	120	120	130	136	82	74	76	78	78	78	68	82	80	74	78	76	68	74
80	709652	120	120	128	124	130	130	130	134	136	138	124	128	130	130	130	140	80	76	78	74	72	72	72	80	80	82	68	72	80	70
81	647701	120	120	128	118	124	128	124	124	130	128	120	134	120	134	136	128	74	80	68	78	78	78	68	78	72	68	76	77	80	72

S.NO	CR NO.	POST DBP_20 Hr	POST DBP_24 Hr	POST MAP_MIN	POST MAP_15 MIN	POST MAP_30 MIN	POST MAP_45 MIN	POST MAP_1HR	POST MAP_1.5 Hr	POST MAP_2 Hr	POST MAP_2.5 Hr	POST MAP_3 Hr	POST MAP_3.5 Hr	POST MAP_4 Hr	POST MAP_8 Hr	POST MAP_12 Hr	POST MAP_16 Hr	POST MAP_20 Hr	POST MAP_24 Hr	POST RR_MIN	POST RR_15MIN	POST RR_30MIN	POST RR_45MIN	POST RR_1HR	POST RR_1.5 Hr	POST RR_2 Hr	POST RR_2.5 Hr	POST RR_3 Hr	POST RR_3.5 Hr	POST RR_4 Hr	POST RR_8 Hr
1	661758	68	76	63	66	63	67	63	71	83	83	62	66	82	71	70	67	75	74	18	18	19	18	18	18	18	18	19	18	18	18
2	48758	68	72	67	80	72	73	69	80	71	82	77	70	71	73	76	70	83	73	17	16	16	17	17	18	17	17	18	16	17	17
3	844906	80	74	74	70	75	73	76	74	73	73	73	71	83	79	73	73	76	71	18	18	17	19	18	18	18	17	16	17	18	18
4	846953	72	80	80	76	77	79	84	87	86	83	84	79	86	79	70	73	84	83	16	16	17	16	16	16	17	16	16	16	17	16
5	817728	80	77	71	68	71	76	77	73	71	82	77	83	68	71	83	79	86	77	16	16	16	16	16	16	16	16	16	17	16	18
6	796589	68	78	68	69	76	71	66	67	66	69	77	70	77	78	83	83	83	86	16	16	16	15	17	16	17	16	15	16	15	16
7	743419	76	80	71	66	83	69	71	71	77	71	73	83	68	68	71	71	73	67	18	18	17	16	18	18	18	18	17	18	18	18
8	182164	82	70	75	66	72	75	75	68	80	62	77	73	68	72	71	78	63	71	16	17	17	17	16	17	17	16	16	16	17	18
9	687038	90	88	77	77	84	63	67	73	79	80	77	71	77	83	82	79	70	73	20	20	20	20	18	19	20	20	20	20	20	20
10	842927	88	90	79	86	86	80	83	95	84	89	90	96	89	89	90	86	89	88	17	16	16	16	16	16	16	15	16	16	15	16
11	785031	76	80	73	71	76	77	73	71	76	77	73	71	83	82	81	84	87	76	19	19	19	18	18	19	18	17	18	19	19	20
12	684401	78	80	69	61	58	70	79	75	75	60	70	76	59	75	67	68	60	77	19	18	19	19	19	18	18	19	19	18	17	18
13	745061	72	88	85	79	86	70	73	80	86	89	87	80	73	86	83	81	84	79	18	19	18	18	18	18	18	17	18	19	18	18
14	870796	68	90	67	65	63	79	71	67	73	71	73	76	73	70	68	76	83	70	16	16	15	16	16	16	16	17	17	15	16	16
15	593279	72	84	80	72	77	62	69	82	70	67	70	62	71	72	77	67	80	62	16	16	16	17	16	16	16	16	16	17	17	16
16	838682	74	72	66	72	67	70	91	73	76	76	71	75	60	83	83	86	71	80	16	16	16	16	16	16	16	17	16	15	15	16
17	826769	76	88	67	80	72	73	71	79	86	86	87	96	91	89	84	89	87	90	14	15	14	14	14	14	14	14	14	14	14	15
18	844610	86	90	80	76	77	82	70	79	70	73	84	83	83	74	83	79	89	80	16	16	17	16	16	16	16	15	16	16	17	15
19	631715	77	88	70	69	78	77	77	83	77	83	76	74	83	84	80	80	86	79	14	14	15	14	15	14	14	14	14	14	14	14
20	838678	72	68	66	75	70	75	76	80	83	70	79	76	83	67	76	83	80	83	14	14	14	14	15	18	17	18	18	18	18	19
21	853850	68	88	71	71	66	66	71	73	71	73	77	68	71	73	70	82	83	77	19	19	18	19	18	19	18	19	18	18	18	19
22	60847	72	80	68	66	70	71	71	76	83	77	83	78	80	77	77	86	82	77	14	14	15	14	15	14	15	15	14	15	14	15
23	788260	80	88	84	73	84	83	87	70	84	83	76	84	83	79	77	83	85	79	18	18	18	17	18	17	18	18	17	18	18	18
24	779908	74	78	67	68	73	71	72	83	63	71	70	73	80	83	73	83	73	76	14	15	14	15	14	14	15	16	14	14	14	14
25	853365	74	82	79	75	70	76	77	67	52	59	69	66	71	73	74	70	75	73	16	16	17	17	16	16	16	16	16	16	16	17
26	77059	72	82	59	71	71	76	73	68	71	73	70	83	79	86	83	86	73	81	18	18	18	17	18	18	18	18	18	18	18	18
27	838113	74	70	69	60	65	76	69	71	75	66	67	69	71	69	83	67	69	67	16	16	16	16	17	16	16	16	16	16	16	16
28	745767	77	74	62	72	69	71	71	80	72	77	80	77	79	84	74	77	86	72	18	18	18	18	18	18	17	18	18	18	18	18
29	801392	72	70	73	71	72	71	76	71	71	77	71	68	82	83	77	76	82	83	16	16	16	17	16	16	16	16	16	17	16	16
30	154040	72	80	72	71	80	68	77	80	80	83	86	87	85	88	87	83	86	81	16	16	17	16	16	16	16	16	16	16	16	16
31	115021	88	84	96	91	90	96	79	90	97	88	98	91	90	90	88	98	91	100	16	17	17	16	17	17	16	16	16	18	17	17
32	778239	80	72	67	65	67	69	67	80	86	70	83	71	83	73	80	86	77	74	16	14	16	16	16	16	16	16	16	16	16	16
33	181376	88	90	70	83	81	84	79	89	87	88	86	81	79	73	79	84	89	88	17	17	17	16	17	16	16	17	17	17	17	17
34	778277	82	74	76	77	82	83	74	70	87	83	79	84	83	83	79	89	83	84	14	14	14	15	14	14	14	13	14	14	14	14
35	774374	76	72	73	77	76	76	79	71	80	68	82	83	79	86	86	82	79	84	16	16	15	16	16	15	16	16	16	16	15	16
36	742441	72	80	66	65	77	71	72	63	77	76	77	86	82	84	82	86	84	83	16	15	16	16	16	15	16	16	16	16	16	16
37	793187	70	72	61	58	69	70	79	60	70	75	67	77	70	66	76	81	73	75	18	16	18	18	18	18	18	18	18	18	17	16
38	788656	72	74	79	71	73	68	70	77	77	80	83	80	82	83	83	74	73	73	14	14	14	14	14	14	14	14	14	14	14	14
39	642695	72	90	79	83	86	84	89	90	96	86	89	88	95	89	90	77	86	80	16	16	16	16	15	16	16	16	16	16	16	16
40	741453	72	72	80	82	84	83	79	73	83	79	79	84	70	73	76	82	90	84	16	16	15	16	16	17	16	16	16	16	16	16
41	54522	72	72	80	76	77	86	79	83	84	96	63	97	80	82	76	80	82	86	16	16	16	16	16	16	16	16	16	16	16	16
42	761709	72	88	61	66	66	70	70	75	73	83	82	70	80	71	82	68	73	69	18	18	17	16	18	19	18	18	18	18	18	18
43	705041	77	90	75	73	78	73	73	83	83	77	82	83	83	79	71	80	86	88	16	16	16	15	16	16	15	16	17	16	16	16
44	717748	72	82	60	72	71	74	73	75	73	71	83	84	79	83	83	73	80	83	17	16	17	16	15	16	16	16	16	16	16	16
45	501243	82	90	76	75	66	67	83	75	76	67	83	75	83	60	67	77	83	80	18	18	18	17	17	17	18	16	18	17	17	18
46	223089	60	68	71	66	65	74	71	62	61	64	73	72	73	79	73	74	78	83	20	17	18	120	19	20	20	20	18	19	19	19
47	681994	80	72	64	60	57	64	65	58	60	71	80	73	71	66	56	70	69	78	20	19	20	18	20	20	20	19	20	19	18	20
48	848229	80	68	73	71	72	62	68	80	68	70	68	70	68	70	67	71	76	83	18	17	18	18	17	18	18	18	18	17	18	18
49	833309	72	80	71	59	75	81	75	71	73	71	67	82	83	80	77	87	86	83	18	18	19	18	17	18	18	18	18	19	18	18
50	676482	70	72	73	73	84	77	87	77	78	72	76	68	77	68	78	84	85	82	16	17	17	16	17	16	16	17	17	16	16	16
51	802226	78	72	77	82	83	69	83	73	79	78	83	73	86	84	83	82	80	86	16	15	16	16	15	16	16	16	17	16	15	15
52	748299	78	80	77	79	70	73	73	85	80	89	87	83	79	89	91	89	96	89	18	16	18	18	18	18	18	17	17	18	17	18
53	734902	68	72	73	76	70	68	71	80	76	73	67	80	80	71	83	73	83	80	18	18	17	18	18	17	18	18	18	18	18	17
54	700569	72	76	76	76	71	73	79	73	72	76	76	78	77	76	79	86	82	87	16	16	17	16	17	16	16	16	17	17	16	16
55	837587	80	72	65	63	67	71	73	73	76	80	70	82	79	86	82	80	83	90	17	16	16	16	17	16	16	16	16	16	16	17
56	722110	68	72	73	76	70	68	71	80	76	73	67	80	80	71	87	73	83	80	18	18	17	18	18	18	18	17	17	18	18	17
57	114546	68	76	73	76	76	83	76	76	77	83	73	71	80	73	81	83	83	87	16	16	17	16	15	17	16	16	16	161	81	17
58	788170	76	68	73	72	62	71	71	80	77	83	74	73	82	83	73	73	81	83	16	16	16	16	16	17	16	16	16	16	16	16
59	686615	72	96	68	66	60	75	60	77	73	71	76	73	77	73	78	83	82	68	20	19	20	19	19	20	20	18	19	19	20	20
60	686026	76	80	61	83	66	72	72	91	70	77	73	70	67	66	76	75	74	77	20	18	19	20	19	20	19	20	20	20	18	19
61	116380	80	78	68	81	72	66	73	71	66	71	75	73	65	65	77	71	67	76	20	19	18	19	20	19	18	18	19	19	20	20
62	795478	76	72	60	75	60	68	67	71	76	73	77	83	82	68	83	75	81	84	18	18	18	19	18	18	18	18	16	18	18	18
63	480567	96	72	71	75	76	83	67	77	76	83	67	71	78	77	66	70	68	82	16	17	16	17	18	17	16	16	16	17	16	16
64	688371	72	70	67	69	62	69	67	71	75	83	86	82	77	73	71	83	84	84	18	18	19	18	18	18	19	18	18	19	18	18
65	5111	80	72	77	85	70	67	68	83	72	77	71	80	82	70	84	89	89	86	17	16	16	16	16	16	16	16	17	17	16	16
66	26745	90	94	68	83	73	69	76	83	77	70	83	67	79	83	77	78	70	77	16	17	16	17	17	16	16	18	16	17	16	16
67	770596	86	72	66	72	66	71	72	76	71	75	60	83	83	86	71	80	81	81	15	15	16	16	17	16	15	16	15	16	15	15
68	991109	80	78	75	72	75	75	77	66	78	71	73	77	83	71	67	83	76	72	16	16	16	17	17	16	15	16	16	16	16	16
69	709433	78	90	61	70	75	76	84	70	83	84	83	77	79	85	79	83	86	80	17	18	16	15	17	17	16	18	18	18	18	17
70	461418	74	72	71	76	71	76	73	73	76	82	83	76	83	73	83	76	84	82	16	16	17	16	16	16	16	16	16	16	16	15
71	808033	86	70	62	73	76	73	77	73	67	80	80	71	87	73	73	80	79	74	16	15	16	16	17	16	17	16	16	16	16	17
72	619198	76	82	68	67	79	71	70	81	83	80	70	73	86	77	76	77	81	76	16	17	16	16	16	16	15	17	16	16	16	16
73	599244	68	72	80	72	77	62	69	82	67	71	72	77	62	84	67	75	83	80	15	15	15	16	17	15	15	15	15	15	15	15
74	683702	80	80	90	63	57	67	72	71	90	77	72	77	66	79	82	76	69	69	20	19	19	18	20	19	18	20	20	20	20	20
75	794620	82	72	79	71	86	86	80	96	89	95	89	89	90	88	70	83	83	80	18	18	18	17	18	18	18	18	18	18	18	18
76	856682	78	72	67	71	76	60	83	77	71	73	76	71	75	76	77	73	71	73	16	16	16	15	16	15	16	16	16	16	16	16
77	795995	80	82	76	69	68	67	66	71	78	77	82	76	84	82	79	86	83	83	18	18	17	17	17	18	17	17	18	18	18	18
78	844810	68	72	78	71	73	68	70	77	73	77	80	82	83	80	82	83	83	74	18	18	17	17	18	18	18	18	18	18	18	18
79	788845	90	86	94	60	73	76	71	76	83	73	76	71	70	73	83	71	70	79	16	16	16	17	15	16	16	17	16	16	17	16
80	709652	74	90	67	69	66	73	73	76	82	83	83	83	83	80	76	83	84	80	17	16	18	17	17	17	16	18	18	18	17	27
81	647701	76	72	71	67	83	66	71	71	83	71	82	83	91	88	67	84	87	80	16	16	17	17	18	16	17	18	18	17	17	17

S.NO	CR NO.	POST RR_12 Hr	POST RR_16 Hr	POST RR_20 Hr	POST RR_24 Hr	POST SPO2_MIN	POST SPO2_15 MIN	POST SPO2_30 MIN	POST SPO2_45 MIN	POST SPO2_1HR	POST SPO2_1.5 Hr	POST SPO2_2 Hr	POST SPO2_2.5 Hr	POST SPO2_3 Hr	POST SPO2_3.5 Hr	POST SPO2_4 Hr	POST SPO2_8 Hr	POST SPO2_12 Hr	POST SPO2_16 Hr	POST SPO2_20 Hr	POST SPO2_24 Hr	POST NV_MIN	POST NV_15MIN	POST NV_30MIN	POST NV_45MIN	POST NV_1HR	POST NV_1.5 Hr	POST NV_2 Hr	POST NV_2.5 Hr	POST NV_3 Hr	POST NV_3.5 Hr
1	661758	17	18	19	18	99	98	98	98	98	98	99	98	98	98	98	99	99	98	98	98	A	A	A	A	A	A	A	A	A	A
2	48758	16	18	18	17	100	100	100	100	99	99	100	100	100	98	100	100	100	100	99	100	P	P	P	P	P	A	A	P	A	A
3	844906	18	18	16	17	98	99	97	99	98	98	99	99	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
4	846953	16	18	16	16	98	98	98	98	98	98	98	99	98	97	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
5	817728	16	16	16	17	98	99	98	98	98	98	98	98	98	99	98	98	98	98	98	97	A	A	A	A	A	A	A	A	A	A
6	796589	16	16	16	16	100	100	99	99	100	100	99	100	100	100	98	100	100	100	100	100	A	A	A	A	A	A	A	A	A	A
7	743419	17	18	16	18	100	100	99	99	100	100	100	100	100	100	100	100	100	99	100	100	A	A	A	A	A	A	A	A	A	A
8	182164	16	17	16	16	99	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
9	687038	20	20	20	18	98	98	97	98	98	98	98	98	98	98	98	98	98	98	98	98	A	A	P	P	P	A	A	A	A	A
10	842927	16	16	16	16	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	A	A	A	A	A	P	P	A	P	A
11	785031	19	18	19	19	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
12	684401	19	19	19	19	98	98	98	99	98	98	98	97	98	98	98	98	98	98	98	98	P	P	P	P	P	A	A	P	A	A
13	745061	19	18	18	18	99	99	98	99	98	98	98	98	98	98	98	98	98	99	98	98	A	A	A	A	A	A	A	A	A	A
14	870796	16	17	17	18	98	98	98	97	98	98	97	98	98	97	97	98	98	97	97	98	P	P	A	A	A	P	A	A	A	A
15	593279	17	16	17	16	99	98	98	98	98	98	98	98	98	98	98	98	99	98	99	98	A	A	A	A	A	A	A	A	A	A
16	838682	16	16	16	15	98	98	98	98	98	98	98	98	97	98	98	98	98	98	98	98	P	A	A	A	A	A	A	A	A	A
17	826769	13	14	14	15	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
18	844610	16	16	16	16	98	99	99	98	98	98	99	97	98	97	98	98	98	99	98	98	A	A	A	A	A	A	A	A	A	A
19	631715	14	14	14	14	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	P	P	A	A	A	A	A	A	A	A
20	838678	18	18	18	18	98	97	97	98	98	98	97	97	97	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
21	853850	18	18	18	18	97	98	97	97	97	96	98	97	97	97	97	96	95	97	97	97	A	A	A	A	A	A	A	A	A	A
22	60847	15	14	14	14	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
23	788260	18	17	17	18	99	99	99	98	99	97	99	98	99	98	98	98	98	99	98	98	A	A	A	A	A	A	A	A	A	A
24	779908	14	14	15	14	98	98	99	97	96	97	98	98	97	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
25	853365	16	16	16	16	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	A	A	A	A	A	A	P	A	A	A
26	77059	18	18	18	18	99	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	P	A	A	A	A	A	A	A	A	A
27	838113	16	16	16	16	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
28	745767	18	18	18	18	96	96	96	96	96	96	97	96	96	96	96	96	96	96	96	97	A	A	A	A	A	A	A	A	A	A
29	801392	16	16	16	16	16	99	98	98	98	98	98	98	98	99	99	99	99	99	99	99	A	A	A	A	A	A	A	A	A	A
30	154040	16	16	16	16	15	98	98	98	98	99	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
31	115021	16	17	17	17	100	99	100	100	100	100	99	100	100	100	100	100	100	100	100	100	A	A	A	A	P	A	A	A	A	A
32	778239	16	16	16	16	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
33	181376	17	17	17	17	100	98	100	100	100	100	100	98	98	99	99	100	99	100	100	99	P	A	A	A	A	A	A	A	A	A
34	778277	14	14	14	14	99	99	99	99	97	97	98	99	99	99	99	99	99	99	99	99	A	A	A	A	A	P	A	A	A	A
35	774374	15	16	16	16	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
36	742441	16	16	16	16	98	98	98	99	97	97	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
37	793187	18	18	18	18	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	P	P	A	A	A	A	P	A	A	A
38	788656	14	14	14	14	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
39	642695	16	16	16	16	98	98	98	98	98	99	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
40	741453	16	15	15	15	99	99	99	98	99	99	98	98	99	98	98	98	98	98	98	99	A	A	A	A	A	A	A	A	A	A
41	54522	16	16	16	16	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
42	761709	18	17	18	18	98	97	97	98	98	98	97	97	98	97	98	98	98	98	97	98	P	A	A	A	A	A	A	A	A	A
43	705041	16	16	16	16	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
44	717748	15	16	16	16	99	98	98	97	98	98	98	98	97	98	97	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
45	501243	18	17	17	18	98	99	98	98	98	98	98	98	98	98	98	98	98	98	99	98	A	A	A	A	A	A	A	A	A	A
46	223089	17	20	20	20	99	98	98	98	98	97	98	98	98	98	99	97	99	98	98	98	A	A	A	A	A	A	A	A	A	A
47	681994	20	20	19	20	99	98	98	98	98	98	99	98	98	98	99	98	98	97	99	98	A	A	A	P	P	P	A	A	A	A
48	848229	18	19	18	18	98	97	98	98	99	99	97	98	98	98	98	99	97	98	97	98	A	A	P	A	A	A	A	A	A	A
49	833309	17	18	18	18	98	97	98	97	97	98	97	97	97	97	97	97	97	97	97	97	A	A	A	A	P	A	A	P	P	A
50	676482	16	16	16	16	99	99	98	98	99	99	99	99	99	99	99	98	97	99	99	98	A	A	A	A	A	A	A	A	A	A
51	802226	15	15	15	15	98	97	98	98	97	99	98	98	98	98	98	97	98	98	97	97	A	A	A	A	A	A	A	A	A	A
52	748299	17	18	18	17	98	97	98	98	98	98	97	96	98	97	98	98	98	98	98	98	A	A	P	P	P	P	A	A	A	A
53	734902	18	17	18	18	98	98	98	99	98	98	97	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
54	700569	16	16	15	16	99	98	98	98	99	98	98	99	98	98	99	98	98	98	99	99	A	A	A	A	A	A	A	A	A	A
55	837587	16	16	15	16	98	99	98	98	98	98	98	98	99	97	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
56	722110	18	17	18	18	98	99	98	97	98	98	97	97	98	98	98	98	98	98	98	97	A	A	A	A	A	A	A	A	A	A
57	114546	16	16	16	16	98	98	98	98	98	97	98	98	98	97	98	97	98	98	98	98	A	A	A	A	A	A	A	A	A	A
58	788170	17	17	16	16	100	100	100	100	100	100	99	100	100	99	100	100	100	100	100	100	A	A	A	A	A	A	A	A	A	A
59	686615	18	19	20	20	98	99	98	98	98	98	98	98	98	98	98	98	98	98	99	97	A	A	A	A	A	A	A	A	A	A
60	686026	20	20	20	20	98	99	98	98	98	98	98	98	98	98	98	97	98	97	98	98	P	A	A	A	A	A	A	A	A	A
61	116380	20	20	20	20	99	98	98	99	99	99	99	99	99	99	98	98	98	99	99	99	A	A	A	A	A	A	A	A	A	A
62	795478	18	18	18	18	98	98	98	97	98	99	97	96	97	98	98	98	98	98	98	98	P	A	P	A	A	A	A	A	A	A
63	480567	16	16	17	17	98	99	98	98	98	98	98	98	97	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
64	688371	18	19	18	18	99	98	98	98	99	98	98	98	99	98	98	98	99	99	98	98	A	A	A	A	A	A	A	A	A	A
65	5111	16	17	17	16	98	98	98	97	98	99	97	98	98	97	98	97	97	97	97	97	A	A	A	P	P	A	A	A	A	A
66	26745	17	16	16	16	98	97	98	98	97	98	98	98	98	98	98	98	98	97	98	97	A	A	A	A	A	A	A	A	A	A
67	770596	15	15	15	15	97	98	98	98	97	97	96	97	97	97	97	97	97	97	96	97	A	A	A	A	A	A	A	A	A	A
68	991109	16	17	16	17	98	98	97	98	97	96	98	97	97	97	97	98	97	98	97	97	A	A	A	A	A	A	A	A	A	A
69	709433	18	18	18	18	98	97	97	97	98	98	98	97	98	97	98	97	97	97	97	97	P	A	A	A	A	A	A	A	A	A
70	461418	16	16	16	16	98	98	98	97	98	99	98	98	98	98	98	98	98	98	98	97	A	A	A	A	A	A	A	A	A	A
71	808033	16	16	16	16	100	99	100	100	100	100	100	100	99	100	100	100	100	99	100	100	P	A	A	A	A	A	P	A	A	P
72	619198	17	16	16	16	98	98	98	97	97	96	97	97	97	98	98	98	97	97	98	98	P	P	A	A	P	A	A	A	A	A
73	599244	14	15	15	15	97	97	97	97	97	97	98	97	98	97	97	97	97	97	97	96	A	A	A	A	A	A	A	A	A	A
74	683702	20	20	20	19	98	97	97	98	97	97	97	97	98	98	98	98	98	98	98	98	A	P	P	A	A	A	A	A	A	A
75	794620	18	18	18	18	96	94	95	95	96	96	95	95	95	95	95	95	95	95	95	96	A	P	A	A	A	A	A	A	A	A
76	856682	16	15	15	16	95	95	95	96	96	97	95	95	95	96	95	95	95	95	95	97	A	A	P	A	P	A	A	A	A	A
77	795995	17	18	19	18	98	98	98	98	98	98	98	97	97	98	97	98	97	97	98	98	A	A	A	A	A	A	A	A	A	A
78	844810	18	18	18	18	97	98	97	98	97	97	98	97	98	97	97	97	98	98	97	97	A	A	A	A	A	A	A	A	A	A
79	788845	16	16	16	16	98	98	96	97	98	98	96	96	97	98	97	97	98	97	98	97	A	A	A	A	A	A	A	A	A	A
80	709652	17	17	17	17	98	98	98	97	98	99	97	97	97	98	97	97	98	98	98	97	A	A	A	A	A	A	A	A	A	A
81	647701	17	17	17	16	98	97	98	98	97	98	96	97	97	97	97	97	97	98	97	97	98	A	A	A	A	A	A	A	A	A

S.NO	CR NO.	POST NV_4 Hr	POST NV_8 Hr	POST NV_12 Hr	POST NV_16 Hr	POST NV_20 Hr	POST NV_24 Hr	TOTALPOSTOPN/V	POST PRU_MIN	POST PRU_15MIN	POST PRU_30MIN	POST PRU_45MIN	POST PRU_1HR	POST PRU_1.5 Hr	POST PRU_2 Hr	POST PRU_2.5 Hr	POST PRU_3 Hr	POST PRU_3.5 Hr	POST PRU_4 Hr	POST PRU_8 Hr	POST PRU_12 Hr	POST PRU_16 Hr	POST PRU_20 Hr	POST PRU_24 Hr	totalpostoppruritis	POST HYP_MIN	POST HYP_15MIN	POST HYP_30MIN	POST HYP_45MIN	POST HYP_1HR	POST HYP_1.5 Hr
1	661758	A	A	A	A	A	A	P	A	A	A	P	P	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A	A
2	48758	A	P	A	P	A	P	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	P	P	P	A
3	844906	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
4	846953	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
5	817728	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
6	796589	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
7	743419	A	A	A	A	A	A	A	A	P	P	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A	A
8	182164	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
9	687038	A	A	A	A	A	A	P	A	A	P	P	P	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	P	A	P
10	842927	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	P	P	P	P	P
11	785031	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
12	684401	P	A	P	P	P	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	P	P	A	P	A
13	745061	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
14	870796	A	A	P	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	P	P	A	A	A
15	593279	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
16	838682	A	A	A	P	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
17	826769	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
18	844610	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
19	631715	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	P	A	A	A	A
20	838678	A	A	A	A	A	A	A	A	A	A	A	P	P	P	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A	A
21	853850	A	A	A	A	A	A	A	A	A	P	P	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A	A
22	60847	A	A	A	A	A	A	A	A	P	P	P	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A	A
23	788260	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
24	779908	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
25	853365	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
26	77059	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A
27	838113	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
28	745767	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
29	801392	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
30	154040	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
31	115021	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A
32	778239	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
33	181376	A	A	A	A	A	A	P	A	A	P	P	P	A	A	A	A	A	A	A	A	A	A	A	P	P	A	A	A	A	A
34	778277	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P
35	774374	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
36	742441	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
37	793187	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	P	A	A	A	P
38	788656	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
39	642695	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
40	741453	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
41	54522	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
42	761709	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A
43	705041	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
44	717748	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A
45	501243	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
46	223089	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
47	681994	A	A	A	P	P	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	P	P	P	P	P
48	848229	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A
49	833309	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	P	P
50	676482	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
51	802226	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
52	748299	A	A	A	A	A	A	P	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	P	A	A	P	P	P	A
53	734902	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
54	700569	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
55	837587	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A
56	722110	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
57	114546	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
58	788170	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
59	686615	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
60	686026	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A
61	116380	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
62	795478	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	P	A	A	A
63	480567	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
64	688371	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
65	5111	A	A	A	A	A	A	P	A	A	A	P	P	P	P	A	A	A	A	A	A	A	A	A	P	A	A	A	P	P	A
66	26745	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
67	770596	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
68	991109	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
69	709433	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A
70	461418	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
71	808033	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A
72	619198	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	P	A	A	P	A
73	599244	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
74	683702	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	P	A	A	A
75	794620	A	A	A	P	P	A	P	A	P	P	P	A	A	A	A	A	A	A	A	A	A	A	A	P	A	P	A	A	A	A
76	856682	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A
77	795995	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
78	844810	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
79	788845	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
80	709652	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
81	647701	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

S.NO	CR NO.	POST HYP_2 Hr	POST HYP_2.5 Hr	POST HYP_3 Hr	POST HYP_3.5 Hr	POST HYP_4 Hr	POST HYP_8 Hr	POST HYP_12 Hr	POST HYP_16 Hr	POST HYP_20 Hr	POST HYP_24 Hr	totalpostohypotension	POST SED_MIN	POST SED_15MIN	POST SED_30MIN	POST SED_45MIN	POST SED_1HR	POST SED_1.5 Hr	POST SED_2 Hr	POST SED_2.5 Hr	POST SED_3 Hr	POST SED_3.5 Hr	POST SED_4 Hr	POST SED_8 Hr	POST SED_12 Hr	POST SED_16 Hr	POST SED_20 Hr	POST SED_24 Hr	VAS_0	VAS_1	VAS_2	VAS_3
1	661758	A	A	A	A	A	A	A	A	A	A	A	1	1	2	2	1	1	1	3	1	1	2	1	1	1	1	2	0	0	3	5
2	48758	P	A	A	P	P	P	A	P	A	P	P	1	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	0	0	0	0
3	844906	A	A	A	A	A	A	A	A	A	A	A	1	2	1	2	2	2	2	2	2	3	2	2	2	2	2	2	0	0	0	0
4	846953	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	1	0	0	0	0
5	817728	A	A	A	A	A	A	A	A	A	A	A	1	1	1	2	1	1	1	1	2	1	2	1	1	1	2	1	0	0	0	0
6	796589	A	A	A	A	A	A	A	A	A	A	A	1	1	1	1	1	1	2	1	2	1	1	2	1	1	1	1	0	0	0	2
7	743419	A	A	A	A	A	A	A	A	A	A	A	1	1	1	1	1	2	1	1	1	1	3	2	2	2	2	2	0	0	2	4
8	182164	A	A	A	A	A	A	A	A	A	A	A	1	2	2	2	2	2	1	1	3	2	2	2	2	2	2	2	0	0	3	3
9	687038	A	A	A	A	A	A	A	A	A	A	P	1	1	1	1	2	1	1	2	2	2	2	2	2	2	2	2	0	1	2	4
10	842927	P	P	P	P	P	P	P	P	P	P	P	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	0	0	3	5
11	785031	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	1	2	2	3	3	3	2	1	2	1	1	2	0	0	0	0
12	684401	A	P	A	A	P	A	P	P	P	A	P	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	1	2
13	745061	A	A	A	A	A	A	A	A	A	A	A	1	2	2	2	2	1	1	1	3	2	1	1	2	2	1	1	0	0	0	1
14	870796	A	A	A	A	A	A	A	A	A	A	P	2	2	2	2	1	2	3	2	2	1	2	2	1	2	2	1	0	0	0	0
15	593279	A	A	A	A	A	A	A	A	A	A	A	1	2	2	2	2	2	2	1	1	2	2	2	2	2	1	2	0	0	0	0
16	838682	A	A	A	A	P	A	A	A	A	A	P	1	1	1	1	1	2	1	2	2	1	1	2	2	1	1	2	0	0	0	0
17	826769	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	0	0	0	0
18	844610	A	A	A	A	A	A	A	A	A	A	A	1	1	2	2	2	1	1	2	2	2	2	2	2	2	2	2	0	0	0	0
19	631715	A	A	A	A	A	A	A	A	A	A	P	1	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	0	0	0	0
20	838678	A	A	A	A	A	A	A	A	A	A	A	1	1	1	1	1	2	2	2	2	2	2	2	1	2	2	1	0	0	0	3
21	853850	A	A	A	A	A	A	A	A	A	A	A	2	2	1	1	2	3	1	1	3	2	2	2	1	2	2	1	0	0	0	1
22	60847	A	A	A	A	A	A	A	A	A	A	A	1	2	2	2	1	1	1	2	1	2	1	2	1	1	1	1	0	0	3	4
23	788260	A	A	A	A	A	A	A	A	A	A	A	2	2	2	1	2	3	3	1	2	1	3	1	2	1	1	1	0	0	0	0
24	779908	A	A	A	A	A	A	A	A	A	A	A	1	1	1	1	1	2	2	1	2	2	1	1	1	1	1	1	0	0	0	0
25	853365	P	A	A	A	A	A	A	A	A	A	P	1	1	1	1	2	1	1	2	1	3	1	1	1	1	1	1	0	0	2	5
26	77059	A	A	A	A	A	A	A	A	A	A	P	1	2	2	2	2	1	1	1	2	1	1	2	2	1	1	1	0	0	0	1
27	838113	A	A	A	A	A	A	A	A	A	A	A	1	2	2	2	2	2	2	2	2	1	1	2	1	1	1	1	0	0	2	4
28	745767	A	A	A	A	A	A	A	A	A	A	A	1	1	2	2	2	1	1	2	1	2	2	1	1	1	1	2	0	0	4	0
29	801392	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	2	3	3	2	3	3	2	2	1	2	1	1	0	0	0	0
30	154040	A	A	A	A	A	A	A	A	A	A	A	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	0	0	1	4
31	115021	A	A	A	A	A	A	A	A	A	A	P	2	2	2	3	3	3	2	2	3	3	1	2	1	2	1	1	0	0	0	1
32	778239	A	A	A	A	A	A	A	A	A	A	A	1	2	2	2	2	1	1	2	1	2	1	2	1	1	1	1	0	0	0	3
33	181376	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	1	2	2	1	2	2	2	1	2	2	1	1	0	0	0	4
34	778277	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	2	3	2	1	2	2	2	1	2	1	2	1	0	0	0	0
35	774374	A	A	A	A	A	A	A	A	A	A	A	1	1	1	2	2	2	1	1	1	1	2	2	2	1	2	1	0	0	0	2
36	742441	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	1	2	2	3	3	2	2	1	2	2	1	1	0	0	0	0
37	793187	A	A	A	A	A	A	A	A	A	A	P	2	2	2	2	2	2	3	2	4	4	3	3	2	1	2	1	0	0	0	0
38	788656	A	A	A	A	A	A	A	A	A	A	A	2	2	2	1	2	2	2	1	2	2	3	3	2	3	1	1	0	0	2	5
39	642695	A	A	A	A	A	A	A	A	A	A	A	2	2	1	2	2	3	3	2	3	2	2	1	1	2	2	1	0	1	4	0
40	741453	A	A	A	A	A	A	A	A	A	A	A	2	2	2	3	3	3	3	2	2	1	2	1	1	3	2	2	0	0	0	0
41	54522	A	A	A	A	A	A	A	A	A	A	A	1	2	2	2	2	2	2	1	2	1	2	1	1	1	1	1	0	0	0	0
42	761709	A	A	A	A	A	A	A	A	A	A	P	2	2	2	2	2	3	3	2	4	3	3	3	4	2	1	1	0	0	0	0
43	705041	A	A	A	A	A	A	A	A	A	A	A	1	1	1	1	2	1	1	1	2	2	1	2	1	2	2	1	0	0	0	0
44	717748	A	A	A	A	A	A	A	A	A	A	P	1	1	1	1	2	2	1	2	2	1	1	2	1	2	1	1	0	0	0	1
45	501243	A	A	A	A	A	P	A	A	A	A	P	2	2	2	1	1	2	3	3	2	1	2	2	1	1	1	2	0	0	0	0
46	223089	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	3	3	3	3	2	2	3	3	3	2	2	2	0	0	0	0
47	681994	P	P	A	P	P	P	P	P	P	P	P	2	2	2	2	2	2	2	1	1	2	2	2	2	1	3	2	0	0	0	0
48	848229	A	A	A	A	A	A	A	A	A	A	P	1	1	1	2	2	1	1	1	1	1	1	1	1	2	2	2	0	0	0	0
49	833309	A	P	P	A	A	A	A	A	A	A	P	2	2	2	2	2	2	2	2	2	2	2	1	2	1	1	1	0	0	0	0
50	676482	A	A	A	A	A	A	A	A	A	A	A	2	1	1	2	3	1	1	2	1	2	2	2	1	1	2	2	0	2	5	0
51	802226	A	A	A	A	A	A	A	A	A	A	A	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	0	0	2	5
52	748299	A	A	A	A	A	A	A	A	A	A	P	1	2	2	1	1	1	1	2	2	2	1	1	2	1	1	1	0	0	3	4
53	734902	A	A	A	A	A	A	A	A	A	A	A	1	2	2	2	1	1	1	1	2	2	1	2	1	1	2	2	0	0	1	2
54	700569	A	A	A	A	A	A	A	A	A	A	A	1	1	1	1	2	2	1	2	2	1	2	2	2	2	2	2	0	0	2	5
55	837587	A	A	A	A	A	A	A	A	A	A	P	2	2	2	2	2	1	2	2	1	1	2	1	3	3	2	2	0	0	0	0
56	722110	A	A	A	A	A	A	A	A	A	A	A	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	0	0	1	4
57	114546	A	A	A	A	A	A	A	A	A	A	A	1	1	1	1	2	1	1	3	1	1	1	1	2	2	1	1	0	0	4	0
58	788170	A	A	A	A	A	A	A	A	A	A	A	2	2	3	3	3	1	1	1	2	2	2	1	2	2	2	2	0	0	0	0
59	686615	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	3	2	1	1	2	2	2	3	2	2	2	2	0	0	0	0
60	686026	A	A	A	A	A	A	A	A	A	A	P	2	2	2	2	3	3	3	3	2	2	1	2	1	2	1	1	0	0	0	0
61	116380	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	2	2	2	3	2	3	3	2	1	1	2	1	0	0	0	0
62	795478	A	A	A	A	A	A	A	A	A	A	P	1	1	1	2	2	2	3	2	2	1	1	1	1	1	1	1	0	0	0	3
63	480567	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	2	2	2	1	2	2	1	1	1	2	1	1	0	0	0	0
64	688371	A	A	A	A	A	A	A	A	A	A	A	1	2	2	1	1	2	2	2	1	1	1	1	1	2	1	2	0	1	3	5
65	5111	A	A	A	A	A	A	A	A	A	A	P	1	1	1	2	2	1	1	1	1	3	1	1	2	2	1	1	0	1	2	4
66	26745	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	3	2	2	2	3	3	3	2	1	1	1	1	0	0	0	0
67	770596	A	A	P	A	A	A	A	A	A	A	A	2	1	1	1	2	1	1	2	1	2	2	1	1	2	1	2	0	2	5	0
68	991109	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	2	1	2	2	1	3	2	3	3	2	2	1	0	2	5	0
69	709433	A	A	A	A	A	A	A	A	A	A	P	1	2	1	1	2	1	1	2	1	1	1	1	1	2	2	1	0	0	0	0
70	461418	A	A	A	A	A	A	A	A	A	A	A	1	1	2	2	1	1	1	1	2	2	1	2	2	2	2	2	0	0	0	0
71	808033	P	A	A	P	A	A	A	A	A	A	P	1	2	2	1	2	1	1	2	1	2	1	2	1	2	3	1	0	0	2	4
72	619198	A	A	P	A	A	A	A	A	A	A	P	2	1	2	1	1	2	1	2	1	2	2	1	2	1	2	2	0	2	5	0
73	599244	A	A	A	A	A	A	A	A	A	A	A	2	2	1	2	1	2	1	1	1	1	1	2	1	1	2	1	0	2	5	0
74	683702	A	A	A	A	A	A	A	A	A	A	P	2	2	2	3	3	2	2	1	2	2	1	2	1	2	1	1	0	0	0	0
75	794620	A	A	A	A	A	A	A	A	P	A	P	1	1	1	1	2	3	2	1	1	1	1	2	1	1	2	1	0	0	3	6
76	856682	A	A	A	A	A	A	A	A	A	A	P	1	1	2	2	1	3	1	2	2	1	1	2	2	2	1	1	0	0	0	0
77	795995	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	2	1	2	1	2	2	1	2	2	2	2	1	0	0	0	0
78	844810	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	2	3	3	2	2	2	2	1	2	1	1	1	0	0	0	0
79	788845	A	A	A	A	A	A	A	A	A	A	A	2	2	2	1	1	1	2	2	1	1	1	1	1	2	2	1	0	0	0	0
80	709652	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	2	2	3	2	2	1	1	2	1	1	2	1	0	0	0	0
81	647701	A	A	A	A	A	A	A	A	A	A	A	1	2	2	1	1	2	1	1	2	1	1	1	1	1	1	1	0	0	1	2

S.NO	CR NO.	VAS_4	VAS_8	VAS_12	VAS_18	VAS_24	RA_0	RA_1	RA_2	RA_3	RA_4	RA_8	RA_12	RA_18	RA_24	SBR_0 MIN	SBR_ 15	SBR_ 30	SBR_ 45	SBR_ 60	SBR_ 75	SBR_ 90	SBR_ 105	SBR_ 120	SBR_ 135	SBR_ 150	SBR_ 165	SBR_ 180	SBR_ 195	SBR_ 210	SBR_ 225	SBR_ 240	SBR_ 255	SBR_ 270	SBR_ 285	SBR_ 300	MBS_0 MIN
1	661758	0	5	0	1	6	A	A	A	P	A	P	A	A	P	T8	T8	T8	T9	T9	T12	T12	L3	S1	-	-	-	-	-	-	-	-	-	-	-	-	3
2	48758	0	0	1	2	4	A	A	A	A	A	A	A	A	P	T8	T8	T8	T8	T8	T8	T8	T8	T10	T10	T12	T12	L3	S1	-	-	-	-	-	-	-	-	3
3	844906	0	0	0	1	1	A	A	A	A	A	A	A	A	A	T8	T8	T8	T8	T8	T8	T8	T8	T8	T8	T10	T10	T12	T12	L3	S1	-	-	-	-	-	-	3
4	846953	0	0	1	2	2	A	A	A	A	A	A	A	A	A	T8	T8	T8	T8	T8	T8	T8	T8	T8	T8	T12	T12	T12	T12	L3	L5	S1	-	-	-	-	-	3
5	817728	0	0	5	2	2	A	A	A	A	A	A	P	A	A	T8	T8	T8	T8	T9	T9	T12	T12	L1	L3	S1	-	-	-	-	-	-	-	-	-	-	-	3
6	796589	3	3	4	0	1	A	A	A	A	A	A	P	A	A	T8	T8	T8	T8	T8	T8	T8	T10	T10	T10	T11	L1	L3	L4	S1	-	-	-	-	-	-	-	3
7	743419	3	4	2	0	0	A	A	A	P	A	P	A	A	A	T9	T9	T9	T9	T10	T11	T11	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	3
8	182164	4	0	2	2	0	A	A	A	A	P	A	A	A	A	T9	T9	T9	T9	T9	T10	T12	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	3
9	687038	3	2	4	0	1	A	A	A	P	A	A	P	A	A	T8	T8	T8	T9	T10	T10	T12	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
10	842927	4	2	1	0	2	A	A	A	P	P	A	A	A	A	T9	T9	T9	T9	T9	T10	T10	T12	L3	S1	-	-	-	-	-	-	-	-	-	-	-	-	3
11	785031	0	0	0	1	2	A	A	A	A	A	A	A	A	A	T8	T8	T8	T8	T8	T8	T8	T9	T11	T11	L1	L3	L4	S1	-	-	-	-	-	-	-	-	3
12	684401	2	1	4	0	0	A	A	A	A	A	A	P	A	A	T8	T8	T8	T8	T9	T9	T9	T9	T10	T10	T12	T12	L4	S1	-	-	-	-	-	-	-	-	3
13	745061	3	4	2	3	4	A	A	A	A	A	A	P	A	A	P	T8	T8	T8	T8	T10	T10	T12	L3	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	3
14	870796	0	0	1	2	3	A	A	A	A	A	A	A	A	A	T9	T9	T9	T9	T9	T9	T9	T11	T11	T11	T11	L3	L4	L4	L4	S1	-	-	-	-	-	-	3
15	593279	0	1	0	2	3	A	A	A	A	A	A	A	A	A	T8	T8	T8	T8	T8	T8	T8	T8	T9	T9	T12	L3	L4	S1	-	-	-	-	-	-	-	-	3
16	838682	1	2	5	0	1	A	A	A	A	A	A	P	A	A	T8	T8	T8	T8	T10	T10	T10	T12	L1	L3	L4	S1	-	-	-	-	-	-	-	-	-	-	3
17	826769	0	0	2	4	1	A	A	A	A	A	A	A	P	A	T8	T8	T8	T8	T8	T8	T8	T9	T9	T12	T12	L3	L3	S1	-	-	-	-	-	-	-	-	3
18	844610	0	2	5	1	0	A	A	A	A	A	A	P	A	A	T9	T9	T9	T9	T9	T9	T9	T9	T9	T9	T12	L1	L3	L4	S1	-	-	-	-	-	-	-	3
19	631715	0	1	1	2	4	A	A	A	A	A	A	A	A	P	T8	T8	T8	T8	T8	T8	T8	T8	T10	T12	L1	L3	L3	L4	S1	-	-	-	-	-	-	-	3
20	838678	5	0	4	2	1	A	A	A	A	P	A	P	A	A	T8	T8	T8	T8	T8	T8	T9	T9	T11	T11	L1	L3	S1	-	-	-	-	-	-	-	-	-	3
21	853850	4	2	4	3	2	A	A	A	A	P	A	P	A	A	T9	T9	T9	T9	T9	T9	T12	T12	L2	S1	-	-	-	-	-	-	-	-	-	-	-	-	3
22	60847	1	2	5	3	2	A	A	A	P	A	A	P	A	A	T8	T8	T8	T8	T8	T9	T11	T11	L1	L3	L4	S1	-	-	-	-	-	-	-	-	-	-	3
23	788260	0	0	1	2	5	A	A	A	A	A	A	A	A	P	T8	T8	T8	T8	T8	T8	T8	T8	T9	T9	-	T9	T11	T11	L1	L3	S1	-	-	-	-	-	3
24	779908	0	3	5	0	1	A	A	A	A	A	A	P	A	A	T8	T8	T8	T8	T8	T8	T8	T8	T9	T9	T12	L3	L3	L4	S1	-	-	-	-	-	-	-	3
25	853365	0	1	2	4	0	A	A	A	P	A	A	A	P	A	T8	T8	T8	T8	T8	T8	T10	T10	T12	L3	S1	-	-	-	-	-	-	-	-	-	-	-	3
26	77059	2	5	0	0	0	A	A	A	A	A	P	A	A	A	T9	T9	T9	T9	T9	T9	T11	T11	L1	L3	L4	S1	-	-	-	-	-	-	-	-	-	-	3
27	838113	0	0	3	5	0	A	A	A	P	A	A	A	P	A	T9	T9	T9	T9	T9	T12	T12	L1	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	3
28	745767	2	5	0	3	5	A	A	P	A	A	P	A	A	P	T8	T8	T8	T8	T8	T8	T12	T12	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	3
29	801392	1	1	2	3	5	A	A	A	A	A	A	A	A	P	T8	T8	T8	T8	T8	T8	T9	T9	T9	T11	T11	L1	L1	L3	L3	S1	-	-	-	-	-	-	3
30	154040	0	3	5	0	1	A	A	A	P	A	A	P	A	A	T8	T8	T8	T8	T8	T8	T10	T10	L1	L1	L3	S1	-	-	-	-	-	-	-	-	-	-	3
31	115021	4	0	2	5	1	A	A	A	A	P	A	A	P	A	T8	T8	T8	T8	T8	T9	T9	T9	T9	T9	T12	T12	L1	L1	L3	S1	-	-	-	-	-	-	3
32	778239	5	0	2	4	1	A	A	A	A	P	A	A	P	A	T8	T8	T8	T8	T9	T12	L1	L3	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	3
33	181376	0	0	0	0	2	A	A	A	P	A	A	A	A	A	T8	T8	T8	T8	T8	T8	T8	T10	T10	T12	T12	L3	L4	S1	-	-	-	-	-	-	-	-	3
34	778277	1	0	2	4	0	A	A	A	A	A	A	A	P	A	T8	T8	T8	T8	T8	T9	T9	T11	T11	L1	L3	L4	S1	-	-	-	-	-	-	-	-	-	3
35	774374	4	0	2	3	4	A	A	A	A	P	A	A	A	P	T8	T8	T8	T8	T8	T9	T9	T12	T12	L3	S1	-	-	-	-	-	-	-	-	-	-	-	3
36	742441	0	1	3	4	0	A	A	A	A	A	A	A	P	A	T8	T8	T8	T8	T8	T8	T9	T9	T12	T12	L3	L4	S1	-	-	-	-	-	-	-	-	-	3
37	793187	0	1	2	5	0	A	A	A	A	A	A	A	P	A	T8	T8	T8	T8	T8	T8	T8	T8	T9	T9	T12	T12	L4	S1	-	-	-	-	-	-	-	-	3
38	788656	0	4	0	2	4	A	A	A	P	A	P	A	A	P	T8	T8	T8	T8	T8	T9	T9	T10	T12	L1	L3	S1`	-	-	-	-	-	-	-	-	-	-	3
39	642695	2	5	0	5	2	A	A	P	A	A	P	A	P	A	T8	T8	T8	T10	T12	L1	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
40	741453	1	2	4	0	0	A	A	A	A	A	A	P	A	A	T8	T8	T8	T8	T8	T8	T8	T8	T8	T9	T12	T12	L1	L3	S1	-	-	-	-	-	-	-	3
41	54522	0	0	1	2	5	A	A	A	A	A	A	A	P	A	T8	T8	T8	T8	T8	T8	T8	T8	T9	T11	T11	L1	L3	S1	-	-	-	-	-	-	-	-	3
42	761709	0	0	2	5	0	A	A	A	A	A	A	A	P	A	T8	T8	T8	T8	T8	T8	T8	T9	T9	T9	T11	T11	L1	L3	S1	-	-	-	-	-	-	-	3
43	705041	1	2	5	0	1	A	A	A	A	A	A	P	A	A	T8	T8	T8	T8	T8	T9	T9	T9	T9	T12	T12	L1	L3	L3	L4	S1	-	-	-	-	-	-	3
44	717748	1	2	5	0	0	A	A	A	A	A	A	P	A	A	T8	T8	T8	T8	T8	T8	T8	T8	T10	Y10	L1	L3	L4	S1	-	-	-	-	-	-	-	-	3
45	501243	0	4	1	4	3	A	A	A	A	A	P	A	P	A	T8	T8	T8	T8	T8	T8	T8	T10	T10	T10	T12	S1	-	-	-	-	-	-	-	-	-	-	3
46	223089	0	1	1	2	4	A	A	A	A	A	A	A	P	A	T8	T8	T8	T8	T8	T8	T9	T9	T9	T9	T12	L1	S1	-	-	-	-	-	-	-	-	-	3
47	681994	0	0	1	2	4	A	A	A	A	A	A	A	A	P	T8	T8	T8	T8	T9	T10	T10	T10	T11	L3	L4	L4	S1	-	-	-	-	-	-	-	-	-	3
48	848229	4	2	3	2	2	A	A	A	A	P	A	A	A	A	T8	T8	T8	T8	T10	T10	T10	T11	L3	L3	S1	-	-	-	-	-	-	-	-	-	-	-	3
49	833309	2	4	0	0	1	A	A	A	A	A	P	A	A	A	T8	T8	T8	T8	T8	T8	T8	T9	T12	T12	L1	L3	L4	S1	-	-	-	-	-	-	-	-	3
50	676482	1	2	4	0	0	A	A	P	A	A	A	P	A	A	T8	T8	T9	T12	L1	L1	L5	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
51	802226	1	4	0	1	2	A	A	A	P	A	P	A	A	A	T8	T8	T8	T8	T8	T8	T8	T9	T9	T11	L3	S1	-	-	-	-	-	-	-	-	-	-	3
52	748299	0	2	4	1	1	A	A	A	P	A	A	P	A	A	T8	T8	T8	T8	T8	T8	T9	T12	L3	S1	-	-	-	-	-	-	-	-	-	-	-	-	3
53	734902	4	0	2	3	3	A	A	A	A	P	A	A	A	A	T8	T8	T8	T8	T9	T11	T11	L3	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	3
54	700569	0	2	4	0	4	A	A	A	P	A	A	P	A	P	T8	T8	T8	T8	T8	T8	T12	T12	L1	L1	L3	L4	S1	-	-	-	-	-	-	-	-	-	3
55	837587	0	0	2	3	5	A	A	A	A	A	A	A	A	P	T8	T8	T8	T8	T8	T8	T8	T10	T10	T11	T11	L1	L4	S1	-	-	-	-	-	-	-	-	3
56	722110	0	1	2	3	3	A	A	A	P	A	A	A	A	A	T8	T8	T8	T8	T9	T9	T9	T11	T11	L3	S1	-	-	-	-	-	-	-	-	-	-	-	-	3
57	114546	2	4	0	0	1	A	A	P	A	A	P	A	A	A	T8	T8	T8	T8	T8	T8	T9	T9	T12	T12	L1	S1	-	-	-	-	-	-	-	-	-	-	3
58	788170	0	1	2	2	4	A	A	A	A	A	A	A	A	P	T8	T8	T8	T8	T8	T9	T9	T9	T9	T9	T12	T12	L1	L3	S1	-	-	-	-	-	-	-	3
59	686615	0	0	1	2	2	A	A	A	A	A	A	A	A	A	T9	T9	T9	T9	T9	T9	T9	T9	T10	T10	T10	T11	L1	L3	S1	-	-	-	-	-	-	-	3
60	686026	0	0	1	1	2	A	A	A	A	A	A	A	A	A	T8	T8	T8	T8	T8	T8	T8	T8	T9	T9	T11	T12	L3	S1	-	-	-	-	-	-	-	-	3
61	116380	0	1	1	2	4	A	A	A	A	A	A	A	A	P	T8	T8	T8	T8	T8	T8	T8	T8	T9	T9	T11	T12	L3	S1	-	-	-	-	-	-	-	-	3
62	795478	5	0	2	5	1	A	A	A	A	P	A	A	P	A	T8	T8	T8	T8	T8	T8	T10	T11	T11	L3	L3	S1	-	-	-	-	-	-	-	-	-	-	3
63	480567	0	0	0	2	3	A	A	A	A	A	A	A	A	A	T8	T8	T8	T8	T8	T8	T8	T8	T8	T8	T10	T11	T11	T12	S1	-	-	-	-	-	-	-	3
64	688371	0	3	6	0	1	A	A	A	P	A	A	P	A	A	T8	T8	T8	T11	T11	T12	L3	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
65	5111	0	2	3	3	6	A	A	A	P	A	A	A	A	P	T9	T9	T9	T10	T12	L4	L5	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
66	26745	0	0	0	0	1	A	A	A	A	A	A	A	A	A	T8	T8	T8	T8	T8	T8	T8	T8	T8	T8	T10	T10	T12	L1	L3	S1	-	-	-	-	-	-	3
67	770596	2	6	0	2	3	A	A	P	A	A	P	A	A	A	T8	T8	T8	T9	T9	T10	T12	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	3
68	991109	4	0	1	2	3	A	A	P	A	P	A	A	A	A	T8	T8	T8	T8	T8	T8	T8	T8	T9	T12	L1	L1	L3	L4	S1	-	-	-	-	-	-	-	3
69	709433	8	0	1	2	4	A	A	A	A	P	A	A	A	P	T8	T8	T9	T11	T12	T12	L1	L3	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	3
70	461418	8	0	1	2	4	A	A	A	A	P	A	A	A	P	T8	T8	T8	T8	T9	T10	T10	T11	T11	L1	L3	S1	-	-	-	-	-	-	-	-	-	-	3
71	808033	0	3	6	0	1	A	A	A	P	A	P	A	A	A	T9	T9	T9	T10	T12	L1	L1	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	3
72	619198	3	6	0	2	3	A	A	P	A	A	P	A	A	A	T8	T8	T9	T9	T12	T12	L3	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	3
73	599244	1	2	6	0	0	A	A	P	A	A	A	P	A	A	T8	T8	T9	T11	T11	L3	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
74	683702	0	0	0	1	2	A	A	A	A	A	A	A	A	A	T8	T8	T8	T8	T8	T8	T8	T8	T9	T9	T12	L4	S1	-	-	-	-	-	-	-	-	-	-	3
75	794620	2	0	4	0	3	A	A	A	P	A	A	P	A	A	T8	T8	T8	T8	T11	L1	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
76	856682	0	0	0	1	4	A	A	A	A	A	A	A	A	P	T8	T8	T8	T8	T8	T8	T8	T8	T8	T8	T8	T12	T12	T12	L3	L5	S1	-	-	-	-	-	3
77	795995	0	1	2	2	3	A	A	A	A	A	A	A	A	A	T8	T8	T8	T8	T8	T8	T9	T9	T9	T12	T12	L4	S1	-	-	-	-	-	-	-	-	-	-	3
78	844810	0	0	0	0	1	A	A	A	A	A	A	A	A	A	T8	T8	T8	T8	T8	T8	T8	T8	T8	T8	T10	T10	L3	L3	S1	-	-	-	-	-	-	-	3
79	788845	4	0	6	4	3	A	A	A	A	P	A	P	P	A	T8	T8	T8	T8	T9	T12	T11	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
80	709652	1	1	4	2	0	A	A	A	A	A	A	A	P	A	T8	T8	T8	T8	T8	T8	T8	T8	T8	T10	T12	T12	L1	L3	S1	-	-	-	-	-	-	-	3
81	647701	5	0	3	5	0	A	A	A	A	P	A	A	P	A	T9	T9	T9	T12	L3	L4	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3

S.NO	CR NO.	MBS_ 15	MBS_ 30	MBS_ 45	MBS_ 60	MBS_ 75	MBS_ 90	MBS_ 105	MBS_ 120	MBS_ 135	MBS_ 150	MBS_ 165	MBS_ 180	MBS_ 195	MBS_ 210	MBS_ 225	MBS_ 240	MBS_ 255	MBS_ 270	MBS_ 285	MBS_ 300
1	661758	3	3	3	2	2	2	1	1	0	-	-	-	-	-	-	-	-	-	-	-
2	48758	3	3	3	3	3	3	3	3	3	3	3	3	3	2	1	1	0	-	-	-
3	844906	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	1	0	-
4	846953	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	0	-	-	-
5	817728	3	3	3	3	3	3	2	2	1	0	-	-	-	-	-	-	-	-	-	-
6	796589	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	1	0	-	-
7	743419	3	3	3	2	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-
8	182164	3	3	2	2	1	1	1	1	0	-	-	-	-	-	-	-	-	-	-	-
9	687038	3	3	3	2	2	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-
10	842927	3	3	3	3	3	3	3	2	0	-	-	-	-	-	-	-	-	-	-	-
11	785031	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	0	-	-	-
12	684401	3	3	3	3	3	3	3	3	3	3	3	2	2	2	1	0	-	-	-	-
13	745061	3	3	3	3	2	2	1	0	-	-	-	-	-	-	-	-	-	-	-	-
14	870796	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	1	0	-
15	593279	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	1	0	-	-
16	838682	3	3	3	3	3	3	3	2	2	1	0	-	-	-	-	-	-	-	-	-
17	826769	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	0	-	-
18	844610	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	1	0	-	-
19	631715	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	0	-	-
20	838678	3	3	3	3	3	3	3	3	3	2	2	2	1	0	-	-	-	-	-	-
21	853850	3	3	3	3	3	3	2	0	-	-	-	-	-	-	-	-	-	-	-	-
22	60847	3	3	3	3	3	2	2	2	1	1	0	-	-	-	-	-	-	-	-	-
23	788260	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	0	-	-	-	-
24	779908	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	1	0	-	-
25	853365	3	3	3	3	3	2	2	2	0	-	-	-	-	-	-	-	-	-	-	-
26	77059	3	3	3	3	3	3	3	2	2	2	1	0	-	-	-	-	-	-	-	-
27	838113	3	3	3	3	3	3	2	2	2	1	0	-	-	-	-	-	-	-	-	-
28	745767	3	3	3	3	3	3	2	1	0	-	-	-	-	-	-	-	-	-	-	-
29	801392	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	0	-	-	-
30	154040	3	3	3	3	3	2	2	2	1	0	-	-	-	-	-	-	-	-	-	-
31	115021	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	1	0	-	-	-
32	778239	3	3	3	3	3	3	2	2	1	0	-	-	-	-	-	-	-	-	-	-
33	181376	3	3	3	3	3	3	3	3	3	2	2	0	-	-	-	-	-	-	-	-
34	778277	3	3	3	3	3	3	3	3	3	3	2	2	2	2	1	0	-	-	-	-
35	774374	3	3	3	3	3	3	3	2	2	1	0	-	-	-	-	-	-	-	-	-
36	742441	3	3	3	3	3	3	3	3	3	3	2	2	2	1	1	0	-	-	-	-
37	793187	3	3	3	3	3	3	3	3	3	2	2	2	2	1	1	0	-	-	-	-
38	788656	3	3	3	3	3	3	3	3	2	1	0	-	-	-	-	-	-	-	-	-
39	642695	3	3	3	3	2	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-
40	741453	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	1	0	-	-
41	54522	3	3	3	3	3	3	3	3	3	2	2	2	1	1	1	0	-	-	-	-
42	761709	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	1	0	-	-	-
43	705041	3	3	3	3	3	3	3	3	2	2	2	1	1	0	-	-	-	-	-	-
44	717748	3	3	3	3	3	3	3	3	3	3	2	2	2	2	1	1	0	-	-	-
45	501243	3	3	3	3	3	3	3	3	3	2	0	-	-	-	-	-	-	-	-	-
46	223089	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	1	0	-
47	681994	3	3	3	3	3	3	3	3	3	2	2	2	1	1	0	-	-	-	-	-
48	848229	3	3	3	3	3	2	2	2	1	0	-	-	-	-	-	-	-	-	-	-
49	833309	3	3	3	3	3	3	3	3	3	2	2	2	2	1	1	0	-	-	-	-
50	676482	3	3	3	3	2	2	2	1	1	0	-	-	-	-	-	-	-	-	-	-
51	802226	3	3	3	3	3	3	3	3	3	2	2	0	-	-	-	-	-	-	-	-
52	748299	3	3	3	3	3	3	3	2	2	2	0	-	-	-	-	-	-	-	-	-
53	734902	3	3	3	3	3	2	2	2	2	0	-	-	-	-	-	-	-	-	-	-
54	700569	3	3	3	3	3	3	3	3	2	2	0	-	-	-	-	-	-	-	-	-
55	837587	3	3	3	3	3	3	3	3	3	3	2	2	1	1	0	-	-	-	-	-
56	722110	3	3	3	3	3	3	2	2	0	-	-	-	-	-	-	-	-	-	-	-
57	114546	3	3	3	3	3	3	2	2	1	0	-	-	-	-	-	-	-	-	-	-
58	788170	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	1	0	-	-	-
59	686615	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	0	-	-
60	686026	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	0	-	-
61	116380	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	0	-	-
62	795478	3	3	3	3	3	3	3	2	0	-	-	-	-	-	-	-	-	-	-	-
63	480567	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	1	0	-	-	-
64	688371	3	3	3	2	2	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-
65	5111	3	3	3	2	2	2	1	1	0	-	-	-	-	-	-	-	-	-	-	-
66	26745	3	3	3	3	3	3	3	3	3	3	2	2	2	2	1	1	0	-	-	-
67	770596	3	3	3	3	2	2	1	1	0	-	-	-	-	-	-	-	-	-	-	-
68	991109	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	0	-
69	709433	3	3	3	3	3	2	2	1	0	-	-	-	-	-	-	-	-	-	-	-
70	461418	3	3	3	3	3	3	3	2	2	2	0	-	-	-	-	-	-	-	-	-
71	808033	3	3	3	3	3	2	2	1	0	-	-	-	-	-	-	-	-	-	-	-
72	619198	3	3	3	3	2	2	1	1	0	-	-	-	-	-	-	-	-	-	-	-
73	599244	3	3	3	2	2	2	1	1	0	-	-	-	-	-	-	-	-	-	-	-
74	683702	3	3	3	3	3	3	3	3	3	3	2	2	2	2	1	0	-	-	-	-
75	794620	3	3	3	3	3	2	2	1	1	0	-	-	-	-	-	-	-	-	-	-
76	856682	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	1	0	-
77	795995	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	1	1	0	-	-
78	844810	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	1	0	-	-
79	788845	3	3	3	3	2	2	2	2	1	1	0	-	-	-	-	-	-	-	-	-
80	709652	3	3	3	3	3	3	3	3	3	3	3	2	2	2	1	1	0	-	-	-
81	647701	3	3	3	3	2	2	1	0	-	-	-	-	-	-	-	-	-	-	-	-

S.NO	CR NO.	Group	Initials	AGE	SEX	WEIGHT(Kg)	Preoperative_HR(beats/min)	SBP (mmHg)	DBP (mmHg)	MAP(mmHg)	RR(/min)	DOS (min) Duration	Highest Level (HLSB)	TOMB (min)	TOSB (min)	DOSB (min)	DOMB (min)	SL_0 MIN	SL_5 MIN	SL_10 MIN	SL_15 MIN	SL_20MIN	SL_25MIN	SL_30MIN	SL_45MIN	SL_60MIN	SL_75MIN	MB_0 MIN	MB_5 MIN	MB_10 MIN	MB_15 MIN	MB_20 MIN
82	899533	A	AA	40	Male	80	90	150	90	90	17	25	T9	5	5	135	150	T11	T10	T9	T9	T9	T9	-	-	-	-	0	2	3	3	3
83	878205	B	ML	63	Male	87	94	170	90	110	22	60	T8	0	5	180	270	T12	T10	T9	T8	T8	T8	T8	-	-	-	1	2	2	3	3
84	823865	A	BS	72	Male	79	84	140	80	87	18	30	T8	5	5	120	120	L1	T10	T8	T8	T8	-	-	-	-	-	0	3	3	3	3
85	802023	B	RR	52	Female	50	102	140	98	75	16	40	T8	0	5	195	285	L1	T12	T8	T8	T8	T8	T8	T8	-	-	1	3	3	3	3
86	913045	A	RS	38	Male	78	80	148	90	88	16	30	T8	0	5	150	150	T12	T8	T8	T8	T8	-	-	-	-	-	1	3	3	3	3
87	831206	B	SR	67	Male	70	100	150	88	91	19	60	T8	5	10	180	255	L1	T11	T8	T8	T8	T8	T8	T8	T8	-	0	2	2	3	3
88	520038	B	JS	41	Male	76	101	120	74	71	20	60	T8	5	10	225	240	L5	T11	T9	T8	T8	T8	T8	T8	T8	-	0	2	3	3	3
89	881717	B	Ns	72	Male	57	86	150	96	86	20	60	T9	0	10	165	270	L1	T11	T10	T9	T9	T9	T9	-	-	-	2	3	3	3	3
90	899625	B	NK	21	Male	58	77	132	88	73	18	30	T9	5	5	195	270	T12	T9	T9	T9	T9	T9	T9	-	-	-	0	3	3	3	3
91	217170	A	RP	63	Male	68	83	148	90	88	16	50	T9	0	5	135	195	T12	T9	T9	T9	T9	T9	T9	T9	T9	-	2	3	3	3	3
92	899018	A	S	60	Male	65	80	128	60	88	18	25	T9	5	5	150	180	L1	T9	T9	T9	T9	T9	T9	-	-	-	0	2	3	3	3
93	902247	B	RS	65	Male	79	90	148	80	94	18	30	T8	5	5	195	270	T12	T8	T8	T8	T8	-	-	-	-	-	0	3	3	3	3
94	891576	B	KS	30	Male	75	76	132	78	82	21	30	T8	0	5	240	300	L1	T8	T8	T8	T8	-	-	-	-	-	1	2	3	3	3
95	887690	A	SK	44	Female	68	92	130	70	83	15	20	T9	0	5	135	150	T12	T9	T9	T9	T9	-	-	-	-	-	0	2	2	3	3
96	885489	B	BR	63	Male	84	69	122	80	67	18	25	T9	0	5	180	300	L1	T9	T9	T9	T9	-	-	-	-	-	1	2	3	3	3
97	817444	B	Ms	62	Male	87	82	172	100	105	16	40	T8	5	5	195	270	L2	T8	T8	T8	T8	T8	-	-	-	-	0	3	3	3	3
98	908988	B	Ss	65	Male	80	78	140	90	80	17	20	T10	5	10	180	255	L1	T11	T10	T10	T10	-	-	-	-	-	0	1	3	3	3
99	904662	A	SR	44	Male	58	80	128	90	68	16	30	T8	5	5	135	120	T12	T8	T8	T8	T8	T8	T8	-	-	-	0	3	3	3	3
100	51787	A	AS	65	Male	70	98	120	80	67	19	50	T9	5	5	135	135	T11	T10	T9	T9	T9	T9	-	-	-	-	0	3	3	3	3

S.NO	CR NO.	MB_25MIN	MB_30MIN	MB_45MIN	MB_60MIN	MB_75MIN	HR_0 min	HR_5 min	HR_10 min	HR_15 min	HR_20 min	HR_25 min	HR_30 min	HR_40 min	HR_50 min	HR_60 min	HR_70 min	SBP_0 min	SBP_5 min	SBP_10 min	SBP_15 min	SBP_20 min	SBP_25 min	SBP_30 min	SBP_40 min	SBP_50 min	SBP_60 min	SBP_70 min	DBP_0 min	DBP_5 min	DBP_10 min
82	899533	3	-	-	-	-	90	89	87	86	88	82	-	-	-	-	-	150	148	146	134	128	120	-	-	-	-	-	90	90	92
83	878205	3	3	-	-	-	55	55	56	57	54	55	59	56	58	58	-	170	160	156	150	152	148	154	150	148	142	-	88	75	78
84	823865	-	-	-	-	-	84	82	80	79	76	78	74	-	-	-	-	140	130	124	90	120	118	120	-	-	-	-	80	72	78
85	802023	3	3	3	-	-	104	102	101	100	98	97	96	94	-	-	-	140	138	138	134	134	124	122	118	-	-	-	98	82	88
86	913045	-	-	-	-	-	66	64	62	60	61	62	59	-	-	-	-	140	128	120	118	102	98	108	-	-	-	-	88	82	72
87	831206	3	3	3	3	-	100	99	98	93	96	90	91	93	92	-	-	150	148	130	136	120	118	100	118	120	124	-	90	90	88
88	520038	3	3	3	3	-	100	100	101	91	92	93	96	98	113	98	-	138	122	114	112	112	120	122	134	128	112	-	72	85	80
89	881717	3	3	-	-	-	84	84	83	77	68	68	67	69	65	62	-	150	146	146	134	130	118	122	124	116	114	-	98	88	88
90	899625	3	3	-	-	-	77	73	74	71	63	65	68	-	-	-	-	132	122	120	111	110	120	118	-	-	-	-	68	72	70
91	217170	3	3	3	-	-	81	80	83	86	84	80	82	86	84	-	-	148	120	146	134	140	138	158	156	154	-	-	90	80	92
92	899018	3	-	-	-	-	80	77	79	78	77	74	-	-	-	-	-	130	118	124	118	120	126	-	-	-	-	-	60	70	70
93	902247	-	-	-	-	-	90	90	88	89	90	85	87	-	-	-	-	158	136	136	130	128	130	126	-	-	-	-	77	80	78
94	891576	-	-	-	-	-	76	74	70	72	76	77	76	-	-	-	-	132	130	134	132	128	128	122	-	-	-	-	78	62	72
95	887690	-	-	-	-	-	92	88	89	90	88	-	-	-	-	-	-	130	120	120	118	116	-	-	-	-	-	-	70	80	78
96	885489	-	-	-	-	-	69	60	66	64	68	60	-	-	-	-	-	122	120	114	104	118	112	-	-	-	-	-	80	72	70
97	817444	3	-	-	-	-	82	83	81	80	78	77	77	79	-	-	-	172	154	150	152	152	152	148	142	-	-	-	100	88	88
98	908988	-	-	-	-	-	78	79	80	72	78	-	-	-	-	-	-	140	130	132	120	118	-	-	-	-	-	-	90	82	88
99	904662	3	3	-	-	-	80	82	84	86	80	81	80	-	-	-	-	128	118	120	110	118	120	128	-	-	-	-	74	74	72
100	51787	3	-	-	-	-	98	92	90	93	96	90	96	88	84	-	-	120	122	118	110	90	110	118	124	124	-	-	74	74	84

S.NO	CR NO.	DBP_15 min	DBP_20 min	DBP_25 min	DBP_30 min	DBP_40 min	DBP_50 min	DBP_60 min	DBP_70 min	MAP_0 min	MAP_5 min	MAP_10 min	MAP_15 min	MAP_20 min	MAP_25 min	MAP_30 min	MAP_40 min	MAP_50 min	MAP_60 min	MAP_70 min	SPO2_0 min	SPO2_5 min	SPO2_10 min	SPO2_15 min	SPO2_20 min	SPO2_25 min	SPO2_30 min	SPO2_40 min	SPO2_50 min	SPO2_60 min	SPO2_70 min
82	899533	88	82	80	-	-	-	-	-	90	88	85	75	73	67	-	-	-	-	-	98	98	97	98	97	98	-	-	-	-
83	878205	80	80	98	78	80	76	74	-	111	110	103	97	83	102	97	97	93	-	-	100	100	100	100	100	100	100	100	100	-
84	823865	60	80	74	74	-	-	-	-	87	82	72	50	67	69	71	-	-	-	-	98	98	98	97	98	98	98	-	-	-
85	802023	72	77	78	74	78	-	-	-	75	83	79	86	86	72	73	66	-	-	-	96	97	96	97	97	97	97	97	-	-
86	913045	66	58	50	62	-	-	-	-	81	73	72	74	63	64	67	-	-	-	-	97	98	98	97	98	97	98	-	-	-
87	831206	80	80	78	60	78	80	74	-	90	88	71	83	67	66	60	66	67	75	-	98	98	97	98	98	98	98	98	98	-
88	520038	80	80	84	90	88	76	80	-	81	100	92	94	94	95	104	105	97	94	-	100	100	100	100	10	100	100	100	100	-
89	881717	82	78	72	74	72	76	76	-	84	87	87	79	78	92	95	98	91	91	-	98	98	98	98	98	97	98	98	98	-
90	899625	58	70	74	68	-	-	-	-	87	74	73	72	63	71	72	-	-	-	-	99	100	99	100	99	98	99	-	-	-
91	217170	88	82	80	84	84	96	-	-	86	66	85	75	79	85	102	100	90	-	-	97	97	98	97	98	97	97	97	98	-
92	899018	78	74	76	-	-	-	-	-	80	71	77	66	71	71	-	-	-	-	-	98	97	98	97	98	98	-	-	-	-
93	902247	80	74	80	74	-	-	-	-	104	83	60	77	79	76	-	-	-	-	-	97	97	98	97	98	97	-	-	-	-
94	891576	68	64	68	66	-	-	-	-	80	89	86	87	85	83	78	-	-	-	-	99	100	99	99	99	100	99	-	-	-
95	887690	72	68	-	-	-	-	-	-	83	67	68	70	71	-	-	-	-	-	-	98	98	97	99	98	-	-	-	-	-
96	885489	66	66	62	-	-	-	-	-	97	72	65	79	74	71	-	-	-	-	-	99	98	98	98	98	99	-	-	-	-
97	817444	86	80	84	84	84	-	-	-	105	95	91	95	99	96	92	86	-	-	-	95	96	95	95	95	95	95	95	-	-
98	908988	80	98	-	-	-	-	-	-	80	75	52	76	80	-	-	-	-	-	-	98	97	97	97	97	-	-	-	-	-
99	904662	73	78	78	74	-	-	-	-	79	71	72	63	66	68	79	-	-	-	-	99	99	99	99	98	99	99	-	-	-
100	51787	70	60	90	84	76	80	-	-	71	73	62	63	50	50	62	73	76	-	-	98	98	98	98	99	98	98	98	98	-

S.NO	CR NO.	RR_0 min	RR_5 min	RR_10 min	RR_15 min	RR_20 min	RR_25 min	RR_30 min	RR_40 min	RR_50 min	RR_60 min	RR_70 min	NV_0 min	NV_5 min	NV_10 min	NV_15 min	NV_20 min	NV_25 min	NV_30 min	NV_40 min	NV_50 min	NV_60 min	totalintro pn/v	PRURITIS_ 0 min	PRURITIS_ 5 min	PRURITIS_ 10 min	PRURITIS_ 15 min	PRURITIS_ 20 min	PRURITIS_ 25 min	PRURITIS_ 30 min	PRURITIS_ 40 min	PRURITIS_ 50 min
82	899533	17	17	16	17	16	17	-	-	-	-	-	A	A	A	A	A	P	-	-	-	-	P	A	P	P	A	A	A	-	-	-
83	878205	22	20	20	21	20	22	21	20	20	22	-	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
84	823865	15	16	16	15	17	17	16	-	-	-	-	A	A	P	P	P	P	A	-	-	-	P	A	P	P	P	P	A	A	A	-
85	802023	16	16	17	15	16	17	16	16	-	-	-	A	A	A	A	A	A	A	A	-	-	A	A	A	A	A	A	A	A	A	-
86	913045	16	16	17	16	17	16	16	-	-	-	-	A	A	A	A	P	P	P	-	-	-	P	A	P	P	P	P	A	A	-	-
87	831206	17	17	18	20	17	18	17	18	18	18	-	A	A	P	A	P	P	P	P	P	A	P	A	A	A	A	A	A	A	A	A
88	520038	20	19	20	20	20	20	20	20	19	20	-	P	A	P	A	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A
89	881717	20	20	20	19	20	20	20	20	20	20	-	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
90	899625	18	18	18	18	18	18	18	-	-	-	-	A	A	A	A	A	A	A	-	-	-	A	A	A	A	A	A	A	A	-	-
91	217170	16	18	18	18	17	17	18	18	17	-	-	A	P	A	A	A	A	A	A	A	-	P	A	A	A	A	A	A	A	A	A
92	899018	17	18	17	18	17	16	-	-	-	-	-	A	A	A	P	A	A	-	-	-	-	P	A	P	P	P	P	P	P	-	-
93	902247	16	17	16	17	17	16	17	-	-	-	-	A	P	P	A	A	A	-	-	-	-	P	A	A	P	P	A	A	-	-	-
94	891576	20	20	20	20	21	20	20	-	-	-	-	A	A	A	A	A	A	A	-	-	-	A	A	A	A	A	A	A	-	-	-
95	887690	15	16	17	15	16	-	-	-	-	-	-	A	A	A	A	A	-	-	-	-	-	A	A	A	A	A	A	-	-	-	-
96	885489	18	18	18	18	18	18	-	-	-	-	-	A	A	A	A	A	A	-	-	-	-	A	A	A	A	A	A	-	-	-	-
97	817444	16	16	15	16	16	17	16	17	-	-	-	A	A	A	A	A	A	A	A	-	-	A	A	A	A	A	A	A	A	A	-
98	908988	17	18	18	18	18	18	-	-	-	-	-	A	A	P	P	A	-	-	-	-	-	P	A	P	P	P	P	-	-	-	-
99	904662	16	16	17	16	17	16	16	-	-	-	-	A	A	A	A	A	A	A	-	-	-	A	A	A	A	A	A	A	-	-	-
100	51787	19	19	18	19	18	19	18	19	19	-	-	A	A	A	A	P	P	A	A	A	-	A	P	P	P	A	P	P	P	P	P

S.NO	CR NO.	PRURITIS_ 60 min	PRURITIS_ 70 min	TOTALINT RAOPPRU RITIS	HYPOTEN SION_0 min	HYPOTEN SION_5 min	HYPOTEN SION_10 min	HYPOTEN SION_15 min	HYPOTEN SION_20 min	HYPOTEN SION_25 min	HYPOTEN SION_30 min	HYPOTEN SION_40 min	HYPOTEN SION_50 min	HYPOTEN SION_60 min	Totalintra ophypote nsiom	POST HR_MIN	POST HR_15MI N	POST HR_30MI N	POST HR_45MI N	POST HR_1HR	POST HR_1.5 Hr	POST HR_2 Hr	POST HR_2.5 Hr	POST HR_3 Hr	POST HR_3.5 Hr	POST HR_4 Hr	POST HR_8 Hr	POST HR_12 Hr	POST HR_16 Hr	POST HR_20 Hr	POST HR_24 Hr
82	899533	-	-	P	A	A	A	A	A	P	-	-	-	-	P	88	87	86	89	82	80	84	88	84	86	87	83	84	86	81	84
83	878205	A	A	A	A	A	A	A	A	A	A	A	A	A	A	50	52	50	55	56	64	68	77	78	77	79	73	75	80	84	88
84	823865	-	-	P	A	A	A	P	P	P	A	-	-	-	P	78	76	79	70	72	80	76	73	74	79	76	77	78	72	71	70
85	802023	-	-	A	A	A	A	A	A	A	A	A	-	-	A	98	99	93	95	99	94	90	93	92	90	91	94	98	96	90	98
86	913045	-	-	P	A	A	A	A	P	P	P	-	-	-	P	60	62	64	66	67	61	62	64	66	68	62	66	67	62	63	65
87	831206	A	-	A	A	A	P	A	P	P	P	P	P	A	P	88	89	80	83	90	96	99	93	86	98	94	90	93	92	95	98
88	520038	A	-	A	A	A	A	A	A	A	A	A	A	A	A	113	114	110	109	100	96	98	92	90	92	99	92	90	95	92	96
89	881717	A	A	A	A	A	A	A	A	A	A	A	A	A	A	68	67	63	60	62	62	60	68	66	67	70	72	78	79	71	80
90	899625	-	-	A	A	A	A	A	A	A	A	-	-	-	A	68	69	70	72	74	71	70	72	76	77	79	69	70	72	74	70
91	217170	-	-	A	A	P	A	A	A	A	A	A	A	-	P	81	82	84	86	80	80	83	86	88	89	81	80	82	87	83	80
92	899018	-	-	P	A	A	A	P	A	A	-	-	-	-	P	78	76	79	77	73	79	70	71	76	73	70	71	78	73	77	70
93	902247	-	-	P	A	P	P	P	P	P	A	-	-	-	P	87	84	80	90	82	89	80	84	86	80	82	88	86	80	83	81
94	891576	-	-	A	A	A	A	A	A	A	A	-	-	-	A	72	78	73	70	72	70	74	76	70	72	74	78	76	74	77	70
95	887690	-	-	A	A	A	A	A	A	-	-	-	-	-	A	88	84	88	82	85	88	82	81	80	84	86	82	80	83	88	82
96	885489	-	-	A	A	A	P	A	A	A	-	-	-	-	P	67	66	65	68	69	64	60	65	61	68	62	69	66	62	60	68
97	817444	-	-	A	A	A	A	A	A	A	A	A	-	-	A	82	80	81	84	80	86	82	84	82	86	88	82	86	82	89	80
98	908988	-	-	P	A	A	P	A	A	-	-	-	-	-	P	78	79	72	78	76	77	70	74	79	77	72	75	79	70	72	80
99	904662	-	-	A	A	A	A	A	A	A	A	-	-	-	A	82	85	84	88	80	80	82	81	79	76	72	77	79	82	80	84
100	51787	-	-	P	A	A	A	A	P	P	A	A	A	-	A	88	85	88	82	89	84	87	80	82	90	89	92	91	90	89	88

S.NO	CR NO.	POST SBP_MIN	POST SBP_15MIN	POST SBP_30MIN	POST SBP_45MIN	POST SBP_1HR	POST SBP_1.5 Hr	POST SBP_2 Hr	POST SBP_2.5 Hr	POST SBP_3 Hr	POST SBP_3.5 Hr	POST SBP_4 Hr	POST SBP_8 Hr	POST SBP_12 Hr	POST SBP_16 Hr	POST SBP_20 Hr	POST SBP_24 Hr	POST DBP_MIN	POST DBP_15MIN	POST DBP_30MIN	POST DBP_45MIN	POST DBP_1HR	POST DBP_1.5 Hr	POST DBP_2 Hr	POST DBP_2.5 Hr	POST DBP_3 Hr	POST DBP_3.5 Hr	POST DBP_4 Hr	POST DBP_8 Hr	POST DBP_12 Hr	POST DBP_16 Hr
82	899533	146	140	148	148	148	138	156	154	150	148	146	152	154	150	148	150	86	90	92	90	78	88	84	96	78	92	86	82	92	78
83	878205	140	138	134	134	130	142	144	122	138	134	130	142	138	144	150	148	90	88	72	72	90	80	74	74	82	82	90	88	76	68
84	823865	120	128	120	128	118	128	124	120	128	130	130	130	132	128	120	130	74	72	72	76	84	78	78	80	78	72	90	80	96	68
85	802023	118	124	128	128	138	142	134	138	140	130	130	128	140	138	136	130	84	78	72	68	88	80	72	76	90	90	80	68	90	88
86	913045	114	118	90	118	112	128	132	128	120	128	120	128	130	130	134	146	70	66	60	72	62	78	96	68	72	76	74	72	72	90
87	831206	134	130	138	134	138	144	136	142	134	140	138	134	138	134	138	134	72	90	88	72	82	88	86	80	72	90	82	72	86	72
88	520038	120	124	118	118	124	110	124	120	118	126	108	110	128	124	128	120	78	70	68	72	78	80	74	78	78	78	76	68	68	78
89	881717	120	122	118	116	110	126	132	128	128	130	128	116	120	118	128	134	72	74	72	76	74	78	86	78	78	74	78	78	74	78
90	899625	120	120	122	120	128	130	124	130	128	130	128	128	130	124	128	138	80	72	74	76	78	72	80	90	68	72	72	68	72	68
91	217170	148	150	150	148	138	148	152	146	148	150	140	150	148	150	148	150	78	88	90	78	88	80	82	86	78	90	90	80	92	78
92	899018	120	120	128	120	130	122	130	130	128	124	128	130	128	120	122	124	80	72	76	80	72	74	80	90	72	76	68	72	72	74
93	902247	124	128	130	120	124	124	126	130	130	128	128	126	130	138	134	130	80	68	90	78	76	78	72	88	84	76	68	70	90	88
94	891576	130	138	130	120	130	132	120	128	130	124	124	128	118	120	124	120	80	90	90	78	88	96	76	78	72	76	80	78	78	78
95	887690	124	128	118	110	110	120	124	118	124	120	128	130	118	128	110	120	80	68	64	76	78	74	68	64	80	80	68	80	64	68
96	885489	120	118	122	124	128	128	120	118	120	124	120	128	124	120	120	130	70	78	78	74	72	78	72	70	78	78	68	68	76	80
97	817444	148	138	150	150	144	134	140	142	134	142	144	148	134	138	134	142	78	88	88	90	68	72	90	80	77	80	88	78	72	80
98	908988	122	120	128	128	124	130	132	130	120	124	128	130	136	134	138	134	74	72	74	80	74	90	96	90	80	80	68	72	86	72
99	904662	120	122	124	124	128	128	128	122	128	120	124	124	120	120	130	128	70	78	76	74	78	72	82	74	78	68	74	80	74	80
100	51787	124	124	130	132	128	120	128	130	120	128	130	128	128	132	120	130	76	80	90	96	76	80	72	72	74	68	72	68	72	96

S.NO	CR NO.	POST DBP_20 Hr	POST DBP_24 Hr	POST MAP_MIN	POST MAP_15 MIN	POST MAP_30 MIN	POST MAP_45 MIN	POST MAP_1HR	POST MAP_1.5 Hr	POST MAP_2 Hr	POST MAP_2.5 Hr	POST MAP_3 Hr	POST MAP_3.5 Hr	POST MAP_4 Hr	POST MAP_8 Hr	POST MAP_12 Hr	POST MAP_16 Hr	POST MAP_20 Hr	POST MAP_24 Hr	POST RR_MIN	POST RR_15MIN	POST RR_30MIN	POST RR_45MIN	POST RR_1HR	POST RR_1.5 Hr	POST RR_2 Hr	POST RR_2.5 Hr	POST RR_3 Hr	POST RR_3.5 Hr	POST RR_4 Hr	POST RR_8 Hr
82	899533	78	90	89	80	87	88	96	79	100	90	98	87	89	97	90	98	96	90	18	18	18	17	18	18	18	18	18	18	18	18
83	878205	90	78	80	79	86	84	70	89	95	73	83	79	70	89	87	89	90	96	22	22	21	21	20	20	21	22	21	21	21	21
84	823865	80	90	71	80	72	77	62	71	71	67	66	82	70	77	68	83	67	70	16	17	16	16	17	17	16	17	17	16	17	17
85	802023	72	80	62	71	80	83	79	89	86	87	90	70	77	83	80	79	88	77	16	16	17	16	16	17	18	18	17	17	18	17
86	913045	72	80	65	74	50	70	71	66	68	83	72	77	71	80	82	70	84	93	16	16	17	16	16	16	17	16	17	16	16	17
87	831206	88	72	86	70	79	86	83	85	79	85	79	89	86	80	83	86	81	84	79	86	14	17	17	15	15	16	15	16	15	16
88	520038	74	76	68	78	73	70	71	57	75	68	66	74	57	65	83	71	79	69	20	17	18	18	20	20	20	20	20	20	19	19
89	881717	78	80	98	95	92	91	86	73	74	76	76	81	76	63	71	66	76	81	20	20	19	19	20	21	20	20	19	20	19	18
90	899625	76	82	67	72	73	69	66	73	76	70	83	73	80	83	73	83	81	83	18	18	17	18	18	19	18	19	18	18	18	19
91	217170	90	78	96	91	90	96	79	63	97	89	96	90	80	97	87	98	88	98	18	19	18	18	18	19	18	18	19	18	18	99
92	899018	74	68	67	72	81	67	73	73	77	70	80	71	83	73	80	71	73	83	16	17	18	17	16	17	16	17	16	16	17	17
93	902247	72	80	76	83	70	68	73	71	78	77	71	81	83	80	78	79	86	77	17	16	17	16	18	17	17	17	16	18	18	18
94	891576	78	80	77	78	70	68	77	68	69	76	82	73	76	71	66	68	71	67	20	19	19	19	19	20	18	19	19	20	19	20
95	887690	76	80	76	83	75	60	66	71	83	75	76	67	83	77	75	83	60	67	16	16	15	16	16	16	17	16	17	17	16	17
96	885489	78	90	74	66	70	75	80	76	72	72	68	71	83	84	73	67	68	78	18	17	19	18	18	19	18	19	19	18	18	18
97	817444	72	80	96	79	91	90	89	84	80	89	86	89	89	96	86	84	84	89	16	17	16	17	16	16	18	16	17	17	18	17
98	908988	88	72	73	72	79	75	72	70	68	90	67	76	83	82	79	86	79	80	17	16	16	17	16	17	17	18	16	16	16	16
99	904662	90	68	74	70	73	75	76	74	73	73	71	83	79	76	71	67	70	83	16	17	17	16	16	17	17	16	17	16	16	18
100	51787	74	72	73	76	70	68	77	67	80	80	71	83	73	83	80	68	71	82	18	18	19	17	19	19	19	19	19	18	18	19

S.NO	CR NO.	POST RR_12 Hr	POST RR_16 Hr	POST RR_20 Hr	POST RR_24 Hr	POST SPO2_MIN	POST SPO2_15 MIN	POST SPO2_30 MIN	POST SPO2_45 MIN	POST SPO2_1HR	POST SPO2_1.5 Hr	POST SPO2_2 Hr	POST SPO2_2.5 Hr	POST SPO2_3 Hr	POST SPO2_3.5 Hr	POST SPO2_4 Hr	POST SPO2_8 Hr	POST SPO2_12 Hr	POST SPO2_16 Hr	POST SPO2_20 Hr	POST SPO2_24 Hr	POST NV_MIN	POST NV_15MIN	POST NV_30MIN	POST NV_45MIN	POST NV_1HR	POST NV_1.5 Hr	POST NV_2 Hr	POST NV_2.5 Hr	POST NV_3 Hr	POST NV_3.5 Hr
82	899533	18	18	19	19	98	98	98	98	98	98	98	98	98	98	98	98	97	97	98	98	A	A	A	A	A	A	A	A	A	A
83	878205	22	20	20	20	100	100	99	100	100	100	100	100	100	100	99	100	99	100	99	100	P	P	P	P	P	A	A	P	P	P
84	823865	18	16	17	18	98	99	97	98	97	98	98	98	97	97	98	98	97	98	98	98	A	A	A	P	A	P	A	P	P	A
85	802023	16	17	17	18	97	97	96	96	98	99	97	97	97	97	97	97	97	97	97	97	P	A	A	A	A	A	A	A	A	A
86	913045	17	18	16	17	97	97	98	97	98	98	97	98	97	98	98	97	97	97	97	97	P	P	A	A	P	P	P	A	A	A
87	831206	16	15	17	16	98	98	97	98	97	97	98	97	98	97	98	97	98	98	98	98	A	A	A	A	A	A	A	A	A	A
88	520038	20	20	20	18	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	A	A	A	A	A	A	A	A	A	A
89	881717	19	19	20	20	99	99	98	97	98	98	98	99	98	98	98	98	98	98	98	99	A	A	A	A	P	A	A	A	A	A
90	899625	18	19	18	18	100	99	98	99	99	99	99	99	98	98	100	100	99	100	99	99	A	A	A	A	A	A	A	A	A	A
91	217170	98	98	97	98	99	99	99	98	98	97	98	99	99	100	99	99	98	98	98	99	A	A	A	A	P	P	A	A	A	A
92	899018	16	16	16	17	98	99	98	98	98	98	98	98	97	97	98	97	98	98	98	98	P	A	A	P	A	A	A	A	A	A
93	902247	18	18	18	17	97	97	97	97	98	98	97	98	97	98	98	97	98	97	98	97	A	A	A	A	A	A	A	A	A	A
94	891576	19	20	19	19	98	99	99	98	97	98	97	98	97	98	97	98	98	98	99	99	A	A	A	A	A	A	A	A	A	A
95	887690	16	17	17	18	98	99	99	98	98	98	98	99	98	98	98	99	98	98	98	99	A	A	P	P	A	A	A	A	A	A
96	885489	18	19	17	18	98	98	98	99	98	98	98	99	98	98	98	99	98	98	99	98	A	A	A	A	A	A	A	A	A	A
97	817444	17	18	17	18	97	97	97	98	97	99	98	98	98	98	98	98	98	98	98	98	A	A	A	A	A	A	A	A	A	A
98	908988	16	16	16	16	98	97	98	97	97	98	98	97	98	97	97	98	97	98	97	98	A	A	A	A	A	A	A	A	A	A
99	904662	17	17	16	18	99	99	98	98	99	98	99	98	98	99	99	99	99	98	98	99	A	A	A	A	A	A	A	A	A	A
100	51787	19	19	19	19	18	98	98	98	98	98	98	99	98	98	99	98	99	98	98	98	A	A	A	A	A	A	A	A	A	A

S.NO	CR NO.	POST NV_4 Hr	POST NV_8 Hr	POST NV_12 Hr	POST NV_16 Hr	POST NV_20 Hr	POST NV_24 Hr	TOTALPOSTOPN/V	POST PRU_MIN	POST PRU_15MIN	POST PRU_30MIN	POST PRU_45MIN	POST PRU_1HR	POST PRU_1.5 Hr	POST PRU_2 Hr	POST PRU_2.5 Hr	POST PRU_3 Hr	POST PRU_3.5 Hr	POST PRU_4 Hr	POST PRU_8 Hr	POST PRU_12 Hr	POST PRU_16 Hr	POST PRU_20 Hr	POST PRU_24 Hr	totalpostoppruritis	POST HYP_MIN	POST HYP_15MIN	POST HYP_30MIN	POST HYP_45MIN	POST HYP_1HR	POST HYP_1.5 Hr
82	899533	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
83	878205	P	A	P	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	P	P	P	P	A
84	823865	A	A	P	A	P	A	P	A	A	A	A	A	A	A	A	A	A	P	P	A	A	A	A	P	A	A	A	A	A	A
85	802023	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A
86	913045	A	A	A	P	A	A	P	P	P	P	P	P	A	A	A	A	A	A	A	A	A	A	A	P	P	A	P	A	P	P
87	831206	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A
88	520038	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
89	881717	A	A	P	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A
90	899625	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
91	217170	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
92	899018	A	A	A	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	P	A	A
93	902247	A	A	A	A	A	A	A	A	A	A	P	P	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	P	P	A
94	891576	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
95	887690	A	A	A	A	P	A	P	A	A	P	P	A	P	P	A	A	A	A	A	A	A	A	A	P	A	A	A	P	A	A
96	885489	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A
97	817444	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A
98	908988	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
99	904662	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
100	51787	A	A	A	A	A	A	A	P	P	P	P	P	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	A	A	A

S.NO	CR NO.	POST HYP_2 Hr	POST HYP_2.5 Hr	POST HYP_3 Hr	POST HYP_3.5 Hr	POST HYP_4 Hr	POST HYP_8 Hr	POST HYP_12 Hr	POST HYP_16 Hr	POST HYP_20 Hr	POST HYP_24 Hr	totalpostophypotension	POST SED_MIN	POST SED_15MIN	POST SED_30MIN	POST SED_45MIN	POST SED_1HR	POST SED_1.5 Hr	POST SED_2 Hr	POST SED_2.5 Hr	POST SED_3 Hr	POST SED_3.5 Hr	POST SED_4 Hr	POST SED_8 Hr	POST SED_12 Hr	POST SED_16 Hr	POST SED_20 Hr	POST SED_24 Hr	VAS_0	VAS_1	VAS_2	VAS_3
82	899533	A	A	A	A	A	A	A	A	A	A	A	2	2	2	1	1	3	1	1	2	2	2	2	1	1	2	1	0	0	6	0
83	878205	A	P	P	P	P	A	P	A	A	A	P	2	2	2	2	2	3	1	3	1	2	2	2	2	1	2	2	0	0	0	0
84	823865	A	P	P	A	A	A	P	A	P	A	P	2	1	2	2	1	1	1	2	2	1	2	2	2	1	2	1	0	0	1	4
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86	913045	P	A	A	A	A	A	A	P	A	A	P	2	1	1	2	2	3	3	2	2	2	1	1	1	3	2	1	0	0	0	4
87	831206	A	A	A	A	A	A	A	A	A	A	P	2	2	2	2	3	2	3	2	1	2	1	1	2	2	1	1	0	0	0	0
88	520038	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	1	3	3	3	1	2	2	1	2	2	1	1	0	0	0	0
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90	899625	A	A	A	A	A	A	A	A	A	A	A	2	2	2	2	2	3	3	2	1	2	2	1	2	2	1	1	0	0	0	0
91	217170	A	A	A	A	A	A	A	A	A	A	A	2	2	2	1	2	1	2	2	1	1	1	1	2	1	1	2	0	0	0	3
92	899018	A	A	A	A	A	A	A	A	A	A	P	1	2	2	1	2	2	1	2	1	2	2	1	1	2	1	1	0	0	4	2
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94	891576	A	A	A	A	A	A	A	A	A	A	A	2	1	2	2	2	2	1	1	1	2	2	1	2	1	2	1	0	0	0	0
95	887690	A	A	A	A	A	A	A	A	P	A	P	1	2	2	1	2	2	2	1	2	2	2	2	1	1	1	1	0	0	0	1
96	885489	A	A	A	A	A	A	A	A	A	A	P	2	2	2	3	2	3	2	1	1	2	2	1	2	2	2	1	0	0	0	0
97	817444	A	A	A	A	A	A	A	A	A	A	P	2	2	2	2	2	3	3	2	1	2	2	1	2	2	1	2	0	0	0	0
98	908988	A	A	A	A	A	A	A	A	A	A	A	2	2	1	2	2	2	3	3	3	2	1	2	1	2	1	1	0	0	0	1
99	904662	A	A	A	A	A	A	A	A	A	A	A	2	2	2	1	1	2	1	1	1	1	2	1	1	2	2	1	0	0	3	4
100	51787	A	A	A	A	A	A	A	A	A	A	A	2	2	1	1	2	1	1	1	2	1	2	1	1	1	2	1	0	1	2	4

S.NO	CR NO.	VAS_4	VAS_8	VAS_12	VAS_18	VAS_24	RA_0	RA_1	RA_2	RA_3	RA_4	RA_8	RA_12	RA_18	RA_24	SBR_0 MIN	SBR_ 15	SBR_ 30	SBR_ 45	SBR_ 60	SBR_ 75	SBR_ 90	SBR_ 105	SBR_ 120	SBR_ 135	SBR_ 150	SBR_ 165	SBR_ 180	SBR_ 195	SBR_ 210	SBR_ 225	SBR_ 240	SBR_ 255	SBR_ 270	SBR_ 285	SBR_ 300	MBS_0 MIN
82	899533	6	1	2	3	4	A	A	P	A	P	A	A	A	P	T9	T9	T9	T9	T12	T12	L1	L1	L4	S1	-	-	-	-	-	-	-	-	-	-	-	3
83	878205	1	1	4	0	0	A	A	A	A	A	A	P	A	A	T8	T8	T8	T8	T8	T8	T9	T9	T9	T12	T12	L4	S1	-	-	-	-	-	-	-	-	-	3
84	823865	2	4	0	1	3	A	A	A	P	A	P	A	A	A	T8	T8	T8	T8	T8	T11	T12	L3	S1	-	-	-	-	-	-	-	-	-	-	-	-	-	3
85	802023	0	0	2	4	0	A	A	A	A	A	A	A	P	A	T8	T8	T8	T8	T8	T8	T8	T8	T8	T12	L1	L3	L4	S1	-	-	-	-	-	-	-	-	3
86	913045	0	1	2	4	0	A	A	A	P	A	A	A	P	A	T8	T8	T8	T9	T9	T12	T11	L1	L3	L4	S1	-	-	-	-	-	-	-	-	-	-	-	3
87	831206	0	0	1	3	5	A	A	A	A	A	A	A	A	P	T8	T8	T8	T8	T8	T9	T9	T9	T9	T11	T11	L3	S1	-	-	-	-	-	-	-	-	-	3
88	520038	1	1	1	3	4	A	A	A	A	A	A	A	A	P	T8	T8	T8	T8	T8	T9	T9	T10	T11	T11	T11	T11	T12	L1	L4	S1	-	-	-	-	-	-	3
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90	899625	0	0	1	1	2	A	A	A	A	A	A	A	A	A	T9	T9	T9	T9	T9	T9	T9	T9	T10	T10	T12	L3	L4	S1	-	-	-	-	-	-	-	-	3
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97	817444	1	2	2	4	0	A	A	A	A	A	A	A	P	A	T8	T8	T8	T8	T8	T8	T9	T9	T10	T10	T12	L3	L4	S1	-	-	-	-	-	-	-	-	3
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S.NO	CR NO.	MBS_ 15	MBS_ 30	MBS_ 45	MBS_ 60	MBS_ 75	MBS_ 90	MBS_ 105	MBS_ 120	MBS_ 135	MBS_ 150	MBS_ 165	MBS_ 180	MBS_ 195	MBS_ 210	MBS_ 225	MBS_ 240	MBS_ 255	MBS_ 270	MBS_ 285	MBS_ 300
82	899533	3	3	3	3	3	3	2	2	2	0	-	-	-	-	-	-	-	-	-	-
83	878205	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	1	1	0	-	-
84	823865	3	3	3	3	2	2	1	0	-	-	-	-	-	-	-	-	-	-	-	-
85	802023	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	1	1	0	-
86	913045	3	3	3	3	3	3	2	2	1	0	-	-	-	-	-	-	-	-	-	-
87	831206	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	1	0	-	-	-
88	520038	3	3	3	3	3	3	3	3	3	3	2	2	2	2	1	1	0	-	-	-
89	881717	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	1	1	0	-	-
90	899625	3	3	3	3	3	3	3	3	3	3	3	2	2	2	1	1	1	0	-	-
91	217170	3	3	3	3	3	3	3	3	3	2	2	2	0	-	-	-	-	-	-	-
92	899018	3	3	3	3	3	3	3	3	3	2	1	0	-	-	-	-	-	-	-	-
93	902247	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	0	-	-
94	891576	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	1	0
95	887690	3	3	3	3	3	2	2	1	1	0	-	-	-	-	-	-	-	-	-	-
96	885489	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	1	1	0
97	817444	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	1	0	-	-
98	908988	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	1	0	-	-	-
99	904662	3	3	3	3	3	2	2	1	0	-	-	-	-	-	-	-	-	-	-	-
100	51787	3	3	3	3	2	2	1	1	0	-	-	-	-	-	-	-	-	-	-	-

Baba Farid University
of Health Sciences
Sadiq Road
Faridkot-151 203 (Pb). INDIA.
Phone : 01639-256232,256236
Tele/Fax : 01639-256235
Email – Examination@bfuhs.ac.in

No. BFUHS/2K19p-TH/ 10387

Date 9/9/19

The Principal,
DMC, Ludhiana.

Subject: Approval of Plan of Thesis.

This is to inform you that the Faculty of Medical Sciences in its meeting held on 29.05.2019 has approved the plan of thesis of **Samriti**, a student of your college for **MD Anaesthesiology** along with the names of Supervisor/Co-Supervisor as under:-

Topic Plan of Thesis

To study the efficacy of add on dexmedetomidine with bupivacaine-fentanyl combination as spinal anaesthetic agents for endoscopic urology surgery

Supervisor
Dr. Suneet Kant Kathuria
Prof.,
Dept. of Anaethesiology,
DMCH, Ludhiana.

Co-Supervisor
Dr. Dinesh Sood
Prof.,
Dept. of Anaesthesiology,
DMCH, Ludhiana.

The student has to submit the four copies of thesis (along with PDF format) , to the Controller of Examinations, BFUHS, Faridkot, at least six months before the commencement of theory examination, if he/she is otherwise eligible to take the examination. He /She must directed to attach a photocopy of this letter with the forwarding letter while submitting thesis to the University along with the letter of approval of University for change of supervisor/Co-Supervisor, change of topic,(if any).

S P Singh
Dr. S P Singh MS(Oph)
Controller of Examinations

Note :

1. *If any discrepancy found regarding topic of thesis or Supervisor/Co-Supervisor, inform undersigned within one month after issue of this letter.*
2. *The student may submit the thesis as per the schedule already conveyed i.e for May/June examination 30th Nov of the preceding the year of examination and for Nov/Dec examinations 31st May of the year of examination.*

TO STUDY THE EFFICACY OF ADD ON DEXMEDETOMIDINE WITH BUPIVACAINE - FENTANYL COMBINATION AS SPINAL ANAESTHETIC AGENTS FOR ENDOSCOPIC UROLOGY SURGERY

THESIS PROPOSAL

FOR APPROVAL OF SUBJECT OF THESIS TO BE SUBMITTED

IN PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

DOCTOR OF MEDICINE

In

ANAESTHESIOLOGY

OF THE

BABA FARID UNIVERSITY OF HEALTH SCIENCES

FARIDKOT

NOVEMBER, 2018

DR. SAMRITI

DEPARTMENT OF ANAESTHESIOLOGY
DAYANAND MEDICAL COLLEGE & HOSPITAL, LUDHIANA
LUDHIANA, PUNJAB-141001

ABSTRACT OF PLAN OF THESIS

Title	To Study the efficacy of add on Dexmedetomidine with Bupivacaine -Fentanyl combination as Spinal Anaesthetic agents for Endoscopic urology surgery
For the degree of	M.D. Anaesthesiology
Name of the candidate	Dr. Samriti
Supervisor	Dr. Suneet Kant Kathuria, Professor, Department of Anaesthesia, DMCH, Ludhiana
Co-supervisor	Dr. Dinesh Sood, Professor, Department of Anaesthesia, DMCH, Ludhiana
Institution	Dayanand Medical College and Hospital, Ludhiana
University	Baba Farid University of Health Sciences, Faridkot

Introduction: Spinal Anaesthesia is the technique which is used most commonly for lower limb and lower abdominal surgeries. Bupivacaine is most commonly used anaesthetic agent intrathecally. The drawback of bupivacaine is limited duration of action when used alone in subarachnoid block. It has been found that many intrathecal opiates like fentanyl,morphine have been used in combination with bupivacaine but there are adverse effects of opiates like nausea,vomiting respiratory depression and pruritis. Dexmedetomidine an alpha 2 adrenoreceptor agonist acts on spinal cord and has been used as an effective adjuvant to bupivacaine for regional anaesthesia.[2] Dexmedetomidine has sedative and analgesic properties. Various studies have shown that intrathecal dexmedetomidineleads to prolongation of spinal anaesthesia and reduces the need of post operative analgesic.

Aim of study: To evaluate the onset, duration of sensory and motor block, duration and quality of analgesia, intraoperative and post-operative hemodynamic variations and adverse effects if any.

Material and Methods: In this randomized clinical trial, 100 patients undergoing elective endoscopic urology surgeries will be randomly allocated into three groups. 1 Group A will receive 10mg hyperbaric Bupivacaine 0.5% (2ml) + 25 microgram Fentanyl (0.5ml) + 0.9% Normal Saline (NS) 0.1ml intrathecally (Total Volume 2.6ml). Group B will receive 10mg hyperbaric Bupivacaine 0.5% (2ml) + 25 microgram Fentanyl (0.5ml) + 10microgram Dexmedetomidine (0.1ml) intrathecally (Total Volume 2.6ml)

Clinical significance: Combination of Dexmedetomidine and fentanyl would enhance the analgesic effects of subarachnoid block.

Keywords: Endoscopic urology surgery, Bupivacaine, Adjuvants, Dexmedetomidine, Fentanyl, Intrathecal, Pain management.

(Signature)	(Signature)	(Signature)	(Signature)
Candidate	Co-supervisor	Supervisor	Principal

CERTIFICATE OF FACILITIES AVAILABLE

This is to certify that the facilities for work on the subject of thesis titled "**TO STUDY THE EFFICACY OF ADD ON DEXMEDETOMIDINE WITH BUPIVACAINE -FENTANYL COMBINATION AS SPINAL ANAESTHETIC AGENTS FOR ENDOSCOPIC UROLOGY SURGERY**" exist in the Department of Anaesthesiology at Dayanand Medical College and Hospital, Ludhiana and will be provided to the candidate. We will see that the data being included in the thesis are genuine and is collected by the candidate herself under our supervision and guidance.

Supervisor

Dr. Suneet Kant Kathuria
Professor
Deptt.of Anaesthesia
DMCH, Ludhiana

Co-Supervisor

Dr. Dinesh Sood
Professor
Deptt.of Anaesthesia
DMCH, Ludhiana

Dr. Sunil Katyal
Professor & Head
Department of Anaesthesia
DMCH, Ludhiana

Place : Ludhiana

Date : 14 Dec 18

APPROVAL PROFORMA
BY
RESEARCH & ETHICAL COMMITTEE
DAYANAND MEDICAL COLLEGE & HOSPITAL, LUDHIANA

Name of candidate	DR. SAMRITI
Department	Anaesthesiology
Topic of Thesis	To Study the efficacy of add on Dexmedetomidine with Bupivacaine - Fentanyl combination as Spinal Anaesthetic agents for Endoscopic urology surgery
Likely date of appearing in PG examination	May, 2021
Date of enrollment	10th May, 2018
Name of Head of Department	Dr. Sunil Katyal
1) Supervisor **2) Co-Supervisor**	Dr. Suneet Kant Kathuria Dr. Dinesh Sood
Signature of Members of Research Committee with Stamp	**Signature of Members of Ethics Committee with Stamp**
1. HOD Pharmacology	1. HOD Physiology
2. HOD Surgery	2. HOD Pathology
3. HOD Pathology	3. HOD Pharmacology
4. HOD Medicine	4. HOD SPM
5. Dean Academics	5. HOD Medicine
6. Vice Principal	6. HOD Surgery
	7. HOD Obst. & Gynae
	8. Legal Expert
	9. Secretary, IEC
	10. Dean Academics
	11. Vice Principal
	12. Principal

Approved: Yes / No

Chairperson
Research Committee

Chairperson
Research Committee

Approved: Yes / ~~No~~

Chairperson
Ethics Committee

Chairperson
Ethics Committee

BABA FARID UNIVERSITY OF HEALTH SCIENCES, FARIDKOT

PROFORMA FOR REGISTRATION OF SUBJECT FOR DISSERTATION

1	NAME OF THE CANDIDATE AND ADDRESS	Dr. Samriti House No.168 Block-B Street No.4 Mount Avenue Colony Phagwara Road, Hoshiarpur 146001
2	NAME OF THE INSTITUTE	Dayanand Medical College & Hospital, Ludhiana
3	COURSE OF STUDY AND SUBJECT	MD ANAESTHESIA
4	DATE OF ADMISSION OF COURSE	10th May, 2018
5	TITLE OF THE TOPIC	To Study the efficacy of add on Dexmedetomidine with Bupivacaine - Fentanyl combination as Spinal Anaesthetic agents for Endoscopic urology surgery

6. BRIEF RESUME OF THE INTENDED WORK

6.1 NEED FOR THE STUDY

Spinal anaesthesia is one of the most commonly used techniques for lower abdominal surgeries. Local anaesthetics e.g. bupivacaine when used alone for subarachnoid block is associated with relatively shorter duration of action, thus early analgesic interventions are required in postoperative period. [1] Various adjuvants have been used for prolonging the duration of subarachnoid block and reducing the postoperative analgesic requirements after major surgeries.

Intrathecal opioid like fentanyl has emerged out as a good adjuvant to regional anaesthetic agents in subarachnoid block. Fentanyl improves the antinocioceptive effect of local anaesthetics and improves the quality of intraoperative analgesia. Intrathecal opioids exert their effect by acting on neuron transmission in dorsal horn. [2] The side effects of opioids are pruritus, bradycardia, respiratory depression, nausea and vomiting. [3-4]. Various other adjuvants in subarachnoid block have been tried to decrease the incidence of side effects while producing beneficial analgesic and anaesthetic effects.

Alpha 2 adrenergic receptor agonists have been widely used as an adjuvant to bupivacaine. Dexmedetomidine has been used as an adjuvant to local anaesthetic agents for spinal anaesthesia because of its good quality of intraoperative and prolonged postoperative analgesia, haemodynamic stability with minimal side effects. [5-7] Dexmedetomidine acts by binding to presynaptic C fibres and postsynaptic dorsal horn neurons.

In literature, many studies have compared the effect of fentanyl and dexmedetomidine separately as adjuvants to bupivacaine in spinal

anaesthesia and found to improves the quality of analgesia, accelerate the onset of action, prolong post-operative analgesia and overcome the problems of subarachnoid block.[5-7]

Previous studies have also revealed that combination of fentanyl and clonidine with bupivacaine in spinal anaesthesia increases the quality of intraoperative analgesia and reduce the demand for post-operative analgesia with increase in duration of sensory block much beyond that provide by fentanyl or dexmedetomidine individually as adjuvants to bupivacaine and reduces the side effects like pruritus, nausea, vomiting and shivering. It has also been reported that intrathecal clonidine is associated with hypotension and bradycardia.[8-9]

Dexmedetomidine and clonidine both are alpha 2 adrenergic agonist but dexmedetomidine is 8-10 times more potent and specific than clonidine with lesser side effects.[10] So we plan to evaluate the usefulness of dexmedetomidine and fentanyl combination as an adjuvant to bupivacaine in spinal anaesthesia. to assess onset and duration of sensory and motor block, haemodynamic effects and duration of postoperative analgesia in endoscopic urology surgery.

6.2 REVIEW OF LITERATURE

Over last two decades there has been considerable revival of interest in the use of central neuraxial block for surgery and pain management as they are associated with safe and smooth recovery as compared to general anaesthesia.[11] Subarachnoid block result in sympathetic block, sensory and motor block depending on the dose,concentration and volume of local anaesthetic injected.[11] Spinal and epidural anaesthesia not only decreases Intraoperative blood loss and post-operative thromboembolic events, but also blunt the stress response to surgery thereby decreasing morbidity and mortality in high risk patients.[13] However, these central neuraxial blocks are also associated with complications like hypotension, bradycardia, post dural puncture headache, urinary retention,shorter duration of action etc. [14] Newer ways of prolonging the duration of subarachnoid block and reducing post-operative analgesic requirement are of special interest. Opioids and local anaesthetic administered together intrathecally have potent synergetic effects. [15]

ADJUVANT TO LOCAL ANAESTHETICS

In order to decrease the side effects of subarachnoid block and preserve the advantage of local anaesthetics, various researches began to add opioid and non-opioid agents to intrathecal local anaesthetics. Fentanyl was widely used in mid-eighties for spinal anaesthesia and it was found that it potentiates the afferent surgical blockade and also improves the intra and post-operative analgesia. [15]

Administration of an alpha-2 agonist via an intrathecal or epidural route provide an analgesic effect in post-operative pain without producing severe

sedation. These effects are due to sparing of supraspinal CNS sites from excessive drug exposure, resulting in robust analgesia without heavy sedation. [16-17]

Dexmedetomidine, an alpha 2 adrenoreceptor agonist has been used for ICU sedation in mechanically ventilated patients, and as a component of general anaesthesia and regional anaesthesia. It is unique as a sedative because it causes limited respiratory depression. It acts on the alpha 2 adrenergic receptors in the spinal cord and brain, primarily at the locus coeruleus that activates sleep centers in the brain, inhibiting norepinephrine release in the ventrolateral preoptic nucleus and reduces the arousal of midbrain, hypothalamus and pontine arousal nuclei. [16-17] Most of the clinical studies about the intrathecal alpha 2 adrenergic agonist are related clonidine.[18-19-20] Based on earlier human studies, it is hypothesized that intrathecal dexmedetomidine would produce more post-operative analgesic effect with hyperbaric bupivacaine in spinal anaesthesia with minimal side effects.[5-7] In view of few evidences[5-7] of dexmedetomidine's efficacy as an adjuvant to hyperbaric bupivacaine in spinal anaesthesia, we strived to explore its usefulness in combination with fentanyl and bupivacaine in spinal anaesthesia.

Ben David et al. conducted a study using small dose saline diluted bupivacaine i.e. 3ml of 0.17%bupivacaine in 2.66% dextrose (5µg) with or without 10 microgram fentanyl in fifty patients undergoing ambulatory surgical arthroscopy and demonstrated that diluted small dose bupivacaine alone was inadequate to provide reliable anaesthesia but addition of fentanyl intensifies and increases the intensity of sensory blockade without increasing the

intensity of motor blockade or prolonging recovery to micturition or street fitness.

Al-Ghanem S M et al. conducted a double-blind controlled study on 76 patients of ASA status I/II scheduled for vaginal hysterectomy, vaginal wall repair, and tension free vaginal tape to evaluate the onset and duration of sensory and motor block as well as operative analgesia and adverse effects of Dexmedetomidine or Fentanyl given intrathecally with isobaric 0.5% Bupivacaine for spinal Anaesthesia and they concluded that 10mg plain Bupivacaine supplemented with 5 µg Dexmedetomidine in spinal anaesthesia produces prolonged motor and sensory block with minimal side effects compared with 25 µg Fentanyl.

Gupta R et al conducted double-blind study on sixty patients of ASA classes I and II scheduled for lower abdominal surgeries to evaluate the onset and duration of sensory and motor block, haemodynamic effects, postoperative analgesia, and adverse effects of Dexmedetomidine or Fentanyl given intrathecally with hyperbaric 0.5% Bupivacaine and found that intrathecal Dexmedetomidine is associated with prolonged motor and sensory block, haemodynamic stability, and reduced demand for rescue analgesics in 24 h as compared to Fentanyl.

Mahendru V et al. conducted a double-blind study on 120 patients to compare the onset, duration of sensory and motor block, hemodynamic effects, postoperative analgesia, and adverse effects of Dexmedetomidine, clonidine, and Fentanyl used intrathecally with hyperbaric 0.5% Bupivacaine for spinal anaesthesia and they concluded that intrathecal Dexmedetomidine is associated with prolonged motor and sensory block, hemodynamic stability,

and reduced demand of rescue analgesics in first 24 hrs. as compared to clonidine, fentanyl, or bupivacaine alone.

Benhamou et al. in a study observed that adding a small dose of intrathecal clonidine (75µg) and fentanyl (12.5µg) to bupivacaine increase the quality of intraoperative analgesia and decreased pain during cesarean section.

6.3 AIMS AND OBJECTIVES OF THE STUDY

To study the efficacy of add on Dexmedetomidine with Bupivacaine -Fentanyl combination as spinal anaesthetic agents in endoscopic urology surgery in terms of:

1. Onset, maximum level and duration of sensory block
2. Onset, quality and duration of motor block.
3. Duration of post-operative analgesia.
4. Hemodynamic profile.

7. MATERIALS AND METHODS

7.1 SOURCE OF DATA

The study will be conducted in Dayanand Medical College and Hospital Ludhiana, after approval from Hospital Ethical committee. A written informed consent will be taken from all patients selected for study.

7.2 METHOD OF COLLECTION OF DATA

Inclusion criteria

All patients belonging to age group 18-80 years and weight 40-95kg with ASA grade I, grade II and scheduled for endoscopic urology surgery.

Exclusion criteria

1) Patient with any contraindication to regional anaesthesia.

2) Patients with history of significant co-existing diseases like ischemic heart disease, impaired renal functions and severe liver disease.

3) Weight <40 kg or >95 kg or height < 150 cm

4) Patient with coagulation disorders.

5) Patient with a history of chronic pain.

6) Morbidly obese patients.

7) Patients with spine deformities like Kyphoscoliosis, Scoliosis etc.

8) Patient with a history of allergy to the drugs to be used.

9) Local skin infection or disease.

Mode of selection of cases:

Study design: Prospective Randomized Controlled trial.

Sample collection method: Random (Sealed Envelope)

Sample Size: 100 patients divided in 2 groups of 50 patients each.

Group Allocation: Will be done using sealed envelope technique.

1 **Group A:** Patients will receive 10mg hyperbaric Bupivacaine 0.5% (2ml) + 25 microgram Fentanyl (0.5ml) + 0.9% Normal Saline (NS) 0.1ml intrathecally (Total Volume 2.6ml)

2 **Group B:** Patients will receive 10mg hyperbaric Bupivacaine 0.5% (2ml) + 25 microgram Fentanyl (0.5ml) + 10microgram Dexmedetomidine (0.1ml) intrathecally (Total Volume 2.6ml)

Pre-anaesthetic evaluation of all the patients will be done one day prior to surgery which will include the following:

1. Detailed history
2. General physical examination and systemic examination
3. Routine Pre-operative investigations which includes: - Hemogram, Random blood sugar, Urine routine, Bleedig time (BT), Clotting time (CT), PTI, INR,Chest X Ray(CXR), Electrocardiogram(ECG).

Informed consent will be taken from all the patients.

All the patients posted for surgery will be kept nil per orally for at least 6 hours before surgery.

•Premedication will be given on the night before surgery as Tab Ranitidine Hydrochloride 150mg and Tab Alprazolam 0.25 mg.

• A large bore IV cannula will be secured and patient will be preloaded with 500ml of normal saline. Patient will be shifted to operation theatre and connected to multi-para monitors for continuous monitoring of oxygen saturation via pulse oximeter (SpO_2), Heart rate (HR), Noninvasive Blood pressure [Systolic/Diastolic/Mean] (NIBP), Electrocardiogram (ECG) and baseline parameters will be recorded.

Under all aseptic precautions with patient in sitting position, subarachnoid block will be performed at L_3- L_4 interspinous space through a midline approach using 26G Quincke's spinal needle. After confirming the clear and free flow of CSF, the study drug will be injected into the subarachnoid space.Nature of study drug will depend upon randomization by sealed envelope technique. The procedure will be done by an anaesthesiologist who is not involved with the further study. Patients will be turned to supine posture immediately with the table kept flat.

Observations: After giving spinal anaesthesia intraoperative observations will be done by an anaesthesiologist who is unaware of the nature of intrathecal drug used. The onset of sensory blockade will be evaluated by light touch using cotton swab. Sensory block level will be recorded every 5mins for first half an hour and then every 15 mins. Maximum level of sensory blockade attained and the time taken for same will be noted. Motor block will be assessed using Modified Bromage score. HR, SBP, DBP. RR and SpO_2 will be recorded before intrathecal injection (Baseline value) and then every 5 mins for first half an hour then every 10 minutes throughout the procedure.

Post-operative assessment:

After shifting patient to recovery room HR, SBP, DBP, MAP, RR and SpO_2 will be recorded every 15 mins for first hour, and then half hourly till first 4 hours and then every 4 hours till 24 hours. Motor block recovery (modified bromage score of zero) and sensory block regression will be assessed every 15 mins till complete recovery from sensory and motor blockade. All observations will be recorded by an anaesthesiologist who is blinded to the group allocation of

the patient. VAS scale will be used to assess the quality of post-operative analgesia.

DEFINITIONS:

- **Onset of sensory blockade:** is defined as the time taken from the completion of the injection of the intrathecal drug till the patient does not feel the light touch by cotton swab at T_{10} level.
- **Time taken for maximum sensory blockade:** is defined as time from the completion of the injection of the intrathecal drug to the maximum sensory block attained.
- **Quality of motor blockade will be assessed by:**

  Modified Bromage score:

  0= No motor block

  1=Inability to raise extended leg, able to move knee and feet.

  2=Inability to raise extended leg and move knee, able to move feet.

  3=Complete motor block of limb.
- **Onset of motor blockade:** Onset time of motor blockade is defined as the time required from completion of injection of the intrathecal drug till the patient develops Modified Bromage score 1.
- **Time taken for maximum motor blockade:** is defined as the time taken from the completion of the injection of intrathecal bupivacaine to the maximum motor blockade attained/ modified Bromage scale 3.
- **Duration of motor blockade:** is defined as the time taken from the time of injection of the intrathecal drug till the patient attains complete motor recovery, modified bromage scale 0 (zero).

- **Duration of sensory blockade:** is defined as the time taken from the time of injection of the intrathecal drug till the patient feels the sensation at S1 dermatome.
- **Duration of analgesia:** is defined as the time taken from the completion of the injection of the intrathecal drug till the patient's 1st request for rescue analgesic in the post-operative period.
- Quality of post-operative analgesic will be assessed using:

1.Visual Analogue Scale

A 10 cm line having verbal anchors at both the end will be used to assess post-operative pain evaluated by VAS i.e. Visual analogue Scale. Scoring will be accomplished by having the patient mark the line and measuring the length of the line in cms. Mark 0 corresponds to 'no pain' and mark 10 corresponds to the worst 'imaginable pain'. Recording will be done at 0, 1, 2,3,4,8,12,18 and 24 hours post operatively or whenever patient complains of pain and one hour after giving rescue analgesia.

2. Postoperative Analgesic Requirement

Patients will be informed before surgery that they can request an analgesic when they feel pain in the post-operative period. Total number of patients in each group requiring supplemental analgesic will be noted. Any patient showing VAS more than or equal to 4 will be administered a supplemental dose of an analgesic with tramadol 50 mg intravenously. The patient will be again assessed for pain after one hour of giving tramadol and if VAS is still found to be more than 4, 50mg tramadol injection will be repeated again up to a maximum of 100mg tramadol in last 4 hours and 400mg in 24 hours. If patient is still having pain after giving maximal allowed tramadol, Inj diclofenac

75 mg will be given by slow IV infusion over 20 minutes up to a maximum of 3 doses in 24 hours. The total analgesic required by the patients in the 24 hours will be quantified and documented in both the groups.

Patients will be discharged from the recovery room when the motor block will be completely resolved modified bromage score zero. The discharge criteria for the ward will be stable vital signs, no nausea or vomiting and no severe pain or bleeding. Patients will also be assessed for the presence of motor or sensory complications on the day after surgery by the observer.

Postoperative Sedation scoring will be done as per Ramsay sedation scale.

RAMSAY SEDATION SCORING

Score	Description	Response
1	Awake	Anxious or restless or both
2	Awake	Cooperative, oriented and tranquil
3	Awake	Responding to commands only
4	Asleep	Brisk response to stimulus
5	Asleep	Sluggish response to stimulus
6	Asleep	No response to stimulus

1. Hypotension: is defined as reduction in systolic blood pressure (SBP) of more than 30% below the base line or fall in SBP less than 90mm of Hg and it will be treated with increased rate on intravenous (iv) fluids and if needed injection ephedrine 6mg iv in incremental dose.
2. Bradycardia: is defined as heart rate of less than 60 beats per minute and will be treated with injection Atropine 0.6mg iv.

3. Hypoxia:is defined as SpO2 <90% and will be treated with supplemental oxygen via venturi mask .
4. Adverse effects: like nausea, vomiting, shivering, itching, pruritus, sedation, respiratory depression and hypotension are recorded will be appropriately treated.

Statistical Analysis

Data will be described in terms of range; mean ±standard deviation (± SD), median, frequencies (number of cases) and relative frequencies (percentages) as appropriate. Comparison of quantitative variables between the study groups will be done using Student t-test and Mann Whitney *U* test for independent samples for parametric and non-parametric data respectively. For comparing categorical data, Chi square ($\chi 2$) test will be performed and exact test was used when the expected frequency is less than 5. Sensitivity, specificity, positive and negative predictive values and accuracy of method and its confidence interval (95% CI) will be also calculated. A probability value (*p* value) less than 0.05 was considered statistically significant. A probability value (*p* value) less than 0.05 will be considered statistically significant.All statistical calculations will be done using SPSS (Statistical Package for the Social Science) SPSS 21 version statistical program for Microsoft Window

Power Analysis

A post hoc power analysis was conducted using the software package, GPower (Faul and Erdfelder 1992). The alpha level used for this analysis was $p<0.05$ and beta was 0.20. The post hoc analyses revealed the statistical power of 0.40 for this study for detecting a small effect, whereas the power exceeded 0.99 for the detection of a moderate to large effect size. Thus, there

was more than adequate power (i.e., power > 0.80) at the moderate to large effect size level, but less than adequate statistical power at the small effect size level.

By using study done by Sidharthsrabam Routray a template and using the Duration of sensory block parameter and we are expecting similar results, Power is coming to be 1.00 and with effect size of 7.58 with 10% chance of error. The sample size of 50 each for two groups will be taken i.e. total sample size will be 100.

7.3 DOES THE STUDY REQUIRE ANY INVESTIGATIONS OR INTERVENTIONS TO BE CONDUCTED ON PATIENTS OR OTHER HUMANS OR ANIMALS? IF SO, PLEASE DESCRIBE BRIEFLY.

The study will not require any special investigation or intervention other than routine investigation i.e. Hemogram, Coagulation Profile and any other Investigation that would be required as a part of pre-procedure assessment depending on patient's medical condition.

7.4 HAS ETHICAL CLEARANCE BEEN OBTAINED FROM YOUR INSTITUTION IN CASE OF 7.3?

Yes, attached herewith.

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PROFORMA

Serial No.

Treatment Group:

Name :

Date of surgery :

Husband's/ Father's Name :

Admission No. :

Age & Sex :

Date of Admission :

Address :

Weight:

Height :

BMI :

Diagnosis :

Operation :

Present History:

Past History

Personal History

Diabetes (Y/N)

Smoking (Y/N)

Hypertension (Y/N)

Alcohol (Y/N)

IHD (Y/N)

Drug Abuse (Y/N)

Bronchial Asthma (Y/N)

TB (Y/N)

Drug Allergy (Y/N)

Renal Disease (Y/N)

Epilepsy (Y/N)

History of previous surgery:

Date :

Anaesthesia :

Complications (if any):

Signature of candidate

Signature of supervisor

General Physical Examination:

Consciousness level	Built & Nutrition
Pulse (bpm)	Respiratory Rate (/ min)
Blood Pressure (mm of Hg)	Temperature (^{0}F)
Pallor	Cyanosis
Oedema	Jaundice
Lymphadenopathy	Clubbing

Breath Holding Time (seconds)

Thyromental Distance (cm)

Mouth Opening

Temporomandibular Joint Mobility

Mallampati Score I II III IV

Back

Spine

Systemic Examination

Cardiovascular System

Respiratory System

Central Nervous System

Gastro-intestinal System

Signature of candidate **Signature of supervisor**

Investigation	Pre-Operative
Hb, TLC, Platelet Count	
Blood Sugar	
Reneal Function Tests	
Serum Electrolytes	
Urine R/E	
PTI	
ECG	
X-Ray Chest	
Others	

ASA Grade I, II

INTRAOPERATIVE

1. HAEMODYNAMIC OBSERVATIONS

Time (mins)	0	5	10	15	20	25	30	40	50	60
HR (per min)										
SBP (mmHg)										
DBP (mmHg)										
MAP (mmHg)										
SpO2 (%)										

Signature of Candidate

Signature of Supervisor

II. Level of Sensory Block

Time (mins)	0	5	10	15	30	45	60	75	90
Sensory level									

Maximum level of sensory block

Time to attain maximum level of sensory block

III. Level of Motor Block

Time (mins)	0	5	10	15	30	45	60	75	90
Modified Bromage score									

Signature of Candidate

Signature of Supervisor

POOSTOERATIVE

I. HAEMODYNAMIC OBSERVATIONS

TIME	0 min	5 min	10 min	15 min	20 min	25 min	30 min	1 hr	1.5 hr	2 hr	2.5 hr	3 hr	3.5 hr	4 hr	8 hr	12 hr	16 hr	20 hr	24 hr
HR (per min)																			
SBP (mm Hg)																			
DBP (mm Hg)																			
MAP (mm Hg)																			
SpO2 (%)																			

II. Analgesia (VAS Score)

	Time (In Hours)								
	0	**1**	**2**	**3**	**4**	**8**	**12**	**18**	**24**
1.Pain score (VAS 0 to 10)									
2.Requirement of rescue analgesic (with dosage)									

Signature of Candidate

Signature of Supervisor

III. Regression of Bloc

Time (Mins)	Levels of Sensory Block	Modified Bromage Score
0		
15		
30		
45		
60		
75		
90		
105		
120		
135		
150		
165		
180		
195		
210		
225		
240		
255		
270		
285		
300		

Signature of Candidate

Signature of Supervisor

INFORMED PATIENT CONSENT

Date: _____

I.....D/o, W/o, S/o.....

.....am willing to participate in the study **"TO STUDY THE EFFICACY OF ADD ON DEXMEDETOMIDINE WITH BUPIVACAINE -FENTANYL COMBINATION AS SPINAL ANAESTHETIC AGENTS FOR ENDOSCOPIC UROLOGY SURGERY"** The procedure with its complications has been explained to me in local vernacular language. I have fully understood that no special tests and extra expenditure in any form, merely for the purpose of thesis is being carried out. I am free to opt out the study any time without assigning any reason.

.....
Signature of the Witness

Name:

.....
Signature of the patient

Signature of Supervisor

Signature of Candidate

मरीज अनुमति फार्म

तिथि _____

मैं _____ पत्नी/पुत्र/पुत्री _____

निवासी _____

इस शोधकार्य **"TO STUDY THE EFFICACY OF ADD ON DEXMEDETOMIDINE WITH BUPIVACAINE -FENTANYL COMBINATION AS SPINAL ANAESTHETIC AGENTS FOR ENDOSCOPIC UROLOGY SURGERY"** में भाग लेने के लिए सहमत हूँ। मैं इस शोधकार्य में भाग लेने के लिए अपनी स्वेच्छा से तैयार हूँ। मैं पुष्टि करता/करती हूँ की यह स्वीकृति देने के लिए मुझे कोई आर्थिक प्रलोभन नहीं दिया गया और न ही दबाव डाला गया है। मुझे इस शोधकार्य का उद्देश्य स्पष्ट कर दिया गया है और मुझे यह विश्वास है की यह विज्ञान और मानवता के लाभ के लिए है। मुझे इस शोधकार्य में होने वाले जोखिम के बारे में समझा दिया गया है और मेरी समझ में यह जोखिम बहुत मामुली है।

मैं इस शोधकार्य में भाग लेने के सम्बन्ध में किसी भी समय अपनी अस्वीकृति व्यक्त कर सकता/सकती हूँ और मेरे अस्वीकृति व्यक्त करने का मेरे इलाज पर कोई प्रभाव नहीं पड़ेगा।

_____

गवाह के हस्ताक्षर

नाम:

_____

रोगी के हस्ताक्षर/अंगूठे का निशान

नाम:

_____

अन्वेषक के हस्ताक्षर

_____

विद्यार्थी के हस्ताक्षर

ਮਰੀਜ਼ ਰਜ਼ਾਮੰਦੀ ਫਾਰਮ

ਮਿਤੀ_____

ਮੈ_____ ਪਤਨੀ/ਪੁੱਤਰ/ਪੁੱਤਰੀ_____

ਵਾਸੀ _____

"TO STUDY THE EFFICACY OF ADD ON DEXMEDETOMIDINE WITH BUPIVACAINE -FENTANYL COMBINATION AS SPINAL ANAESTHETIC AGENTS FOR ENDOSCOPIC UROLOGY SURGERY" ਤੇ ਚਲ ਰਹੀ ਖੋਜ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਰਜ਼ਾਮੰਦ ਹਾਂ। ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਮੈ ਆਪਣੀ ਮਰਜ਼ੀ ਨਾਲ ਤਿਆਰ ਹਾਂ। ਮੈ ਇਹ ਦਸਣਾ ਚਾਹੁੰਦਾ ਹਾਂ/ ਚਾਹੁੰਦੀ ਹਾਂ ਕੇ ਇਹ ਰਜ਼ਾਮੰਦੀ ਦੇਣ ਵਾਸਤੇ ਮੈਨੂ ਕਿਸੇ ਵੀ ਤਰਾਂ ਦਾ ਲੋਭ-ਲਾਲਚ ਨਹੀ ਦਿੱਤਾ ਗਿਆ ਅਤੇ ਨਾ ਹੀ ਕੋਈ ਦਬਾ ਪਾਇਆ ਗਿਆ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਦਾ ਮਨੋਰਥ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ ਅਤੇ ਮੈਨੂ ਇਹ ਭਰੋਸਾ ਦਵਾਇਆ ਗਿਆ ਹੈ ਕੇ ਇਹ ਖੋਜ ਵਿਗਿਆਨ ਅਤੇ ਮਾਨਵਤਾ ਦੀ ਭਲਾਈ ਲਈ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਵਿਚ ਹੋਣ ਵਾਲੇ ਖਤਰੇ ਬਾਰੇ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ ਅਤੇ ਮੈਨੂ ਇਹ ਯਕੀਨ ਹੈ ਕੇ ਇਹ ਖਤਰਾ ਬਹੁਤ ਮਾਮੂਲੀ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਦਾ ਢੰਗ – ਤਰੀਕਾ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ।

ਮੈ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਬਾਰੇ ਆਪਣੀ ਰਜ਼ਾਮੰਦੀ ਕਿਸੇ ਵੀ ਸਮੇ ਵਾਪਸ ਲੈ ਸਕਦਾ ਹਾਂ/ ਸਕਦੀ ਹਾਂ ਅਤੇ ਮੇਰੀ ਰਜ਼ਾਮੰਦੀ ਵਾਪਸ ਲੈਣ ਦਾ ਮੇਰੇ ਇਲਾਜ ਤੇ ਕੋਈ ਅਸਰ ਨਹੀ ਹੋਵੇਗਾ।

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ਗਵਾਹ ਦੇ ਹਸਤਾਖਰ

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ਮਰੀਜ਼ ਦੇ ਹਸਤਾਖਰ

ਮਿਤੀ_____

ਮਿਤੀ_____

ਪਤਾ _____

ਪਤਾ _____

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ਨਿਰੀਖਕ ਦੇ ਹਸਤਾਖਰ

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ਸਿਖਿਆਰਥੀ ਦੇ ਹਸਤਾਖਰ